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=> file reg
FILE 'REGISTRY' ENTERED AT 10:41:26 ON 11 SEP 2003
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=> d his


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L1                STR
L2                STR

     FILE 'REGISTRY' ENTERED AT 10:20:17 ON 11 SEP 2003
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L4              4 S L1 AND L2 AND L3
L5             70 S L1 AND L2 AND L3 FUL
                  SAV L5 LEE223/A

     FILE 'HCA' ENTERED AT 10:29:03 ON 11 SEP 2003
L6             29 S L5
L7          38822 S ACID?(2A)(LABL? OR LABIL? OR CLEAV? OR SENS? OR DISPROP
L8         141521 S RESIST OR RESISTS OR PHOTORESIST? OR MASK? OR PHOTOMASK
L9             15 S L6 AND (L7 OR L8)
L10            14 S L6 NOT L9

     FILE 'REGISTRY' ENTERED AT 10:41:26 ON 11 SEP 2003


=> d l5 que stat
L1                STR
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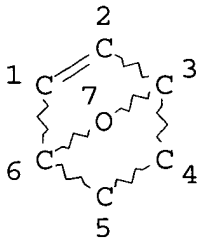


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DEFAULT MLEVEL IS ATOM
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GRAPH ATTRIBUTES:
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NUMBER OF NODES IS   8
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STEREO ATTRIBUTES: NONE
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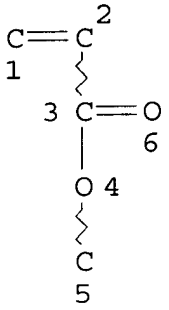

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DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE
L3 SCR 2043
L5 70 SEA FILE=REGISTRY SSS FUL L1 AND L2 AND L3

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SEARCH TIME: 00.00.01

=> file hca
FILE 'HCA' ENTERED AT 10:41:48 ON 11 SEP 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

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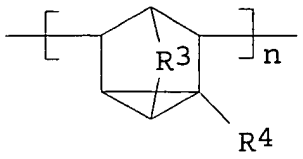
L9 ANSWER 1 OF 15 HCA COPYRIGHT 2003 ACS on STN
139:108695 Acrylic fluoropolymers, their chemically amplified **photoresists** with good vacuum UV transparency and etching resistance, and pattern formation using them. Hatakeyama, Jun; Harada, Yuji; Kawai, Yoshio; Sasako, Masaru; Endo, Masataka; Kishimura, Shinji; Maeda, Kazuhiko; Otani, Michitaka; Komoritani, Haruhiko (Shin-Etsu Chemical Industry Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.; Central Glass Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 2003192737 A2 20030709, 34 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-393359 20011226.
GI



I

AB The invention relates to polymers having repeating units of [CR1(CO2R2)CH2]m (R1 = F, C1-15-fluoroalkyl; R2 = acid-unstabilizable group; 0 < m < 1) and I [R3 = methylene, ethylene, O, S; R4 = (CH2)aCO2R5, (CH2)aCR62OR7; R5, R7 = acid-unstabilizable group, adhesive group, H, C1-20-alkyl, fluoroalkyl; R6 = H, F, C1-20-alkyl, fluoroalkyl; 0 < n < 1; 0 < m + n .ltoreq. 1; a = 0-6]. The **photoresists** are patterned by F2 laser, Ar2 laser, or soft X ray.

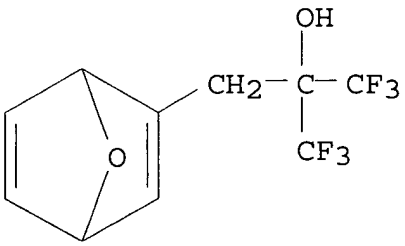
IT **557771-69-4P**
(chem. amplified **photoresists** with good vacuum UV transparency and etching resistance)

RN 557771-69-4 HCA

CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with .alpha.,.alpha.-bis(trifluoromethyl)-7-oxabicyclo[2.2.1]hepta-2,5-diene-2-ethanol (9CI) (CA INDEX NAME)

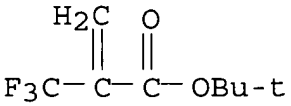
CM 1

CRN 557771-68-3
CMF C10 H8 F6 O2



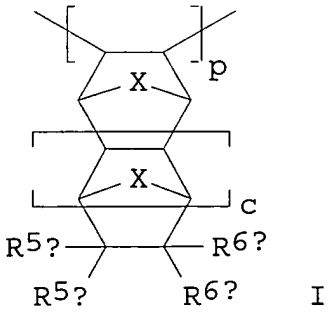
CM 2

CRN 105935-24-8
CMF C8 H11 F3 O2



IC ICM C08F220-22
ICS C08F232-00; C08F234-00; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST pos **photoresist** chem amplification vacuum UV; cycloolefin acrylic fluoropolymer UV laser **photoresist**; etching resistance UV **photoresist** photolithog
IT Positive **photoresists**
(UV; chem. amplified **photoresists** with good vacuum UV transparency and etching resistance)
IT Fluoropolymers, preparation
(acrylic; chem. amplified **photoresists** with good vacuum UV transparency and etching resistance)
IT Photolithography
(chem. amplified **photoresists** with good vacuum UV transparency and etching resistance)
IT 557771-65-0P 557771-66-1P 557771-67-2P **557771-69-4P**
557771-71-8P
(chem. amplified **photoresists** with good vacuum UV transparency and etching resistance)

L9 ANSWER 2 OF 15 HCA COPYRIGHT 2003 ACS on STN
139:108691 Polymers having acid-dissociable groups, chemically amplified **photoresists** with good vacuum UV transparency and etching resistance, and pattern formation using them. Hatakeyama, Jun; Harada, Yuji; Kawai, Yoshio; Sasako, Masaru; Endo, Masataka; Kishimura, Shinji; Maeda, Kazuhiko; Otani, Michitaka; Komoritani, Haruhiko (Shin-Etsu Chemical Industry Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.; Central Glass Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 2003192735 A2 20030709, 35 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-393354 20011226.
GI



I

AB The invention relates to polymers having repeating units of (CR1R2CR3CO2R4)m (R1, R2 = H, F, C1-20-alkyl, fluoroalkyl; R3 = F, C1-20-alkyl, fluoroalkyl; R4 = acid-unstabilizable group; 0 .ltoreq.

m < 1), (CR1R2CR3OH)n (R1-3 = same as above; 0 < n < 1), and I [R5a, R5b, R6a, R6b = H, OH, C1-20-alkyl, fluoroalkyl, (CH2)dCO2R7, (CH2)dCR82OR7; R7 = acid-unstabilizable group, adhesive group, H, C1-20-alkyl, fluoroalkyl, etc.; R8 = R1, R2; 0 .ltoreq. p < 1; 0 < m + n + p .ltoreq. 1; m = p .noteq. 0; c = 0, 1; d = 0-6; X = methylene, ethylene, O, S]. The **photoresists** are patterned by F2 laser, Ar2 laser, or soft X ray.

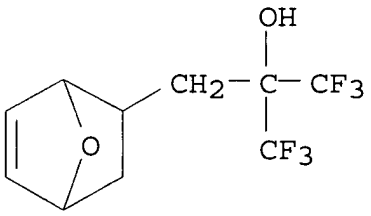
IT **557112-91-1P**
(chem. amplified **photoresists** with good vacuum UV transparency and etching resistance)

RN 557112-91-1 HCA

CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with .alpha.,.alpha.-bis(trifluoromethyl)-7-oxabicyclo[2.2.1]hept-5-ene-2-ethanol and 1-(trifluoromethyl)ethenyl acetate (9CI) (CA INDEX NAME)

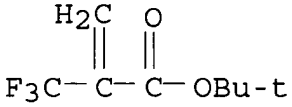
CM 1

CRN 557104-43-5
CMF C10 H10 F6 O2



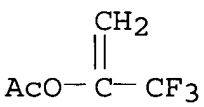
CM 2

CRN 105935-24-8
CMF C8 H11 F3 O2



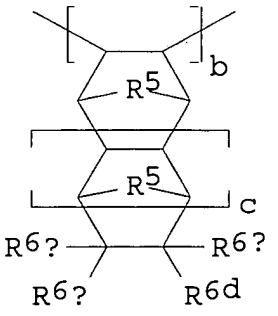
CM 3

CRN 2247-91-8
CMF C5 H5 F3 O2



IC ICM C08F220-18
ICS C08F216-02; C08F232-08; C08F234-00; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST pos **photoresist** chem amplification vacuum UV; cycloolefin acrylic fluoropolymer UV laser **photoresist**; etching resistance UV **photoresist** photolithog
IT Positive **photoresists**
(UV; chem. amplified **photoresists** with good vacuum UV transparency and etching resistance)
IT Fluoropolymers, preparation
(acrylic; chem. amplified **photoresists** with good vacuum UV transparency and etching resistance)
IT Photolithography
(chem. amplified **photoresists** with good vacuum UV transparency and etching resistance)
IT 557112-90-0P **557112-91-1P** 557112-92-2P
(chem. amplified **photoresists** with good vacuum UV transparency and etching resistance)

L9 ANSWER 3 OF 15 HCA COPYRIGHT 2003 ACS on STN
139:108690 Chemically amplified positive **photoresists**, photolithography thereon, and polymers therefor. Harada, Yuji; Hatakeyama, Jun; Kawai, Yoshio; Sasako, Masaru; Endo, Masataka; Kishimura, Shinji; Maeda, Kazuhiko; Otani, Michitaka; Komoritani, Haruhiko (Shin-Etsu Chemical Industry Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.; Central Glass Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 2003192733 A2 20030709, 27 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-393302 20011226.
GI



I

AB The **photoresists**, showing superior high sensitivity to .ltoreq.170-nm actinic rays, comprise polymers of Mw 1,000-500,000 having mer units of [CR1R2CR3(CO2R4)]a and I [R1, R2 = H, F, C1-20 (fluoro)alkyl; R3 = F, C1-20 (fluoro)alkyl; R4 = **acid-labile** group, coupling group, C1-20 (fluoro)alkyl; R5 = O,

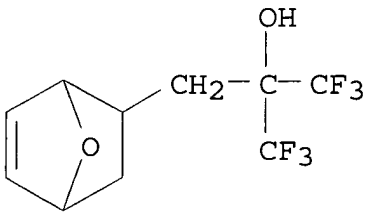
S; R6a-R6d = H, OH, (CH2)dCR72(OR8), (CH2)dCO2R8 [R7 = H, F, C1-20 (fluoro)alkyl; R8 = H, **acid-labile** group, coupling group, C1-20 (fluoro)alkyl], C1-20 (fluoro)alkyl; 0 < a, b < 1; 0 < a + b .ltoreq. 1; c = 0, 1; 0 .ltoreq. d .ltoreq. 6], acid generators, and org. solvents . The **photoresists** are patternwise exposed to 100-180-nm or 1-30-nm high-energy beams (e.g., F2 laser beams, Ar2 laser beams, soft x rays) and developed (after post-exposure baking).

IT **557104-44-6P 557104-46-8P 557104-47-9P**
557104-48-0P 557104-49-1P 557104-50-4P
557104-52-6P 557104-65-1P
(chem. amplified pos. **photoresists** showing superior high sensitivity to high-energy beams)

RN 557104-44-6 HCA
CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with .alpha.,.alpha.-bis(trifluoromethyl)-7-oxabicyclo[2.2.1]hept-5-ene-2-ethanol (9CI) (CA INDEX NAME)

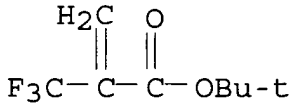
CM 1

CRN 557104-43-5
CMF C10 H10 F6 O2



CM 2

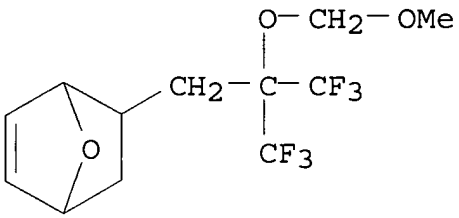
CRN 105935-24-8
CMF C8 H11 F3 O2



RN 557104-46-8 HCA
CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with 5-[3,3,3-trifluoro-2-(methoxymethoxy)-2-(trifluoromethyl)propyl]-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

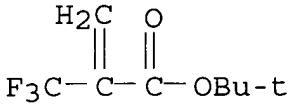
CM 1

CRN 557104-45-7
CMF C12 H14 F6 O3



CM 2

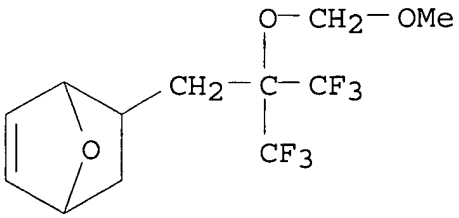
CRN 105935-24-8
CMF C8 H11 F3 O2



RN 557104-47-9 HCA
CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl 2-(trifluoromethyl)-2-propenoate and 5-[3,3,3-trifluoro-2-(methoxymethoxy)-2-(trifluoromethyl)propyl]-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

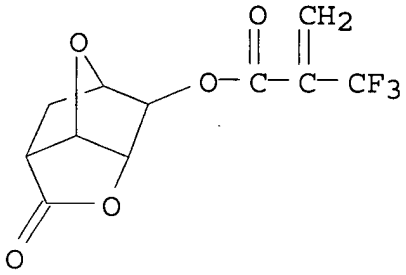
CM 1

CRN 557104-45-7
CMF C12 H14 F6 O3



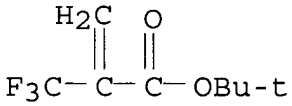
CM 2

CRN 479084-31-6
CMF C11 H9 F3 O5



CM 3

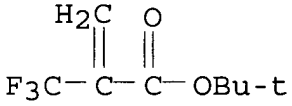
CRN 105935-24-8
CMF C8 H11 F3 O2



RN 557104-48-0 HCA
CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with .alpha.,.alpha.-dimethyl-7-oxabicyclo[2.2.1]hept-5-ene-2-methanol (9CI) (CA INDEX NAME)

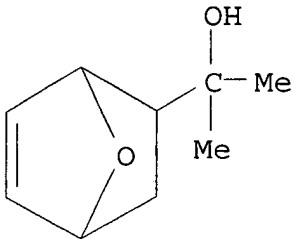
CM 1

CRN 105935-24-8
CMF C8 H11 F3 O2



CM 2

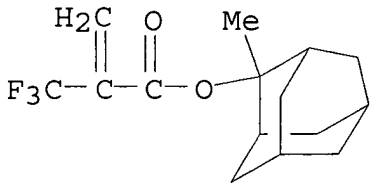
CRN 90765-54-1
CMF C9 H14 O2



RN 557104-49-1 HCA
CN 2-Propenoic acid, 2-(trifluoromethyl)-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with .alpha.,.alpha.-dimethyl-7-oxabicyclo[2.2.1]hept-5-ene-2-methanol (9CI) (CA INDEX NAME)

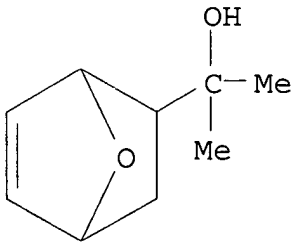
CM 1

CRN 188739-86-8
CMF C15 H19 F3 O2



CM 2

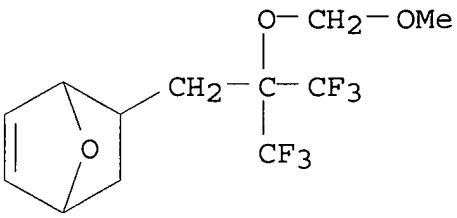
CRN 90765-54-1
CMF C9 H14 O2



RN 557104-50-4 HCA
CN 2-Propenoic acid, 2-(trifluoromethyl)-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 5-[3,3,3-trifluoro-2-(methoxymethoxy)-2-(trifluoromethyl)propyl]-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

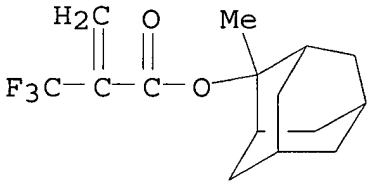
CM 1

CRN 557104-45-7
CMF C12 H14 F6 O3



CM 2

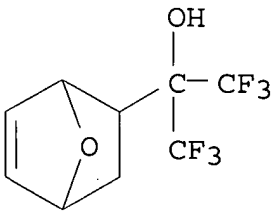
CRN 188739-86-8
CMF C15 H19 F3 O2



RN 557104-52-6 HCA
CN 2-Propenoic acid, 2-(trifluoromethyl)-, hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl ester, polymer with .alpha.,.alpha.-bis(trifluoromethyl)-7-oxabicyclo[2.2.1]hept-5-ene-2-methanol and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-(trifluoromethyl)-2-propenoate (9CI) (CA INDEX NAME)

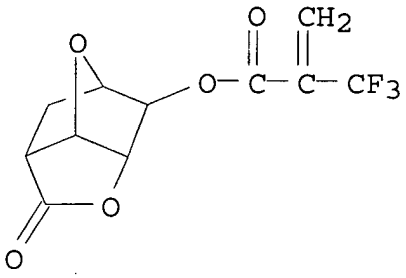
CM 1

CRN 557104-51-5
CMF C9 H8 F6 O2



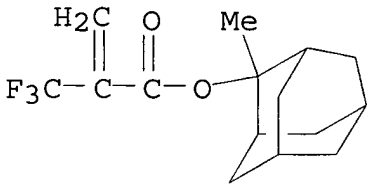
CM 2

CRN 479084-31-6
CMF C11 H9 F3 O5



CM 3

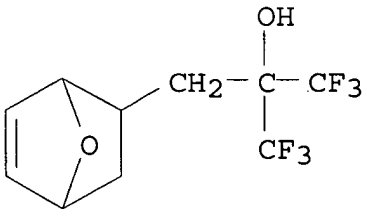
CRN 188739-86-8
CMF C15 H19 F3 O2



RN 557104-65-1 HCA
CN 2-Propenoic acid, 2-(trifluoromethyl)-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with .alpha.,.alpha.-bis(trifluoromethyl)-7-oxabicyclo[2.2.1]hept-5-ene-2-ethanol (9CI) (CA INDEX NAME)

CM 1

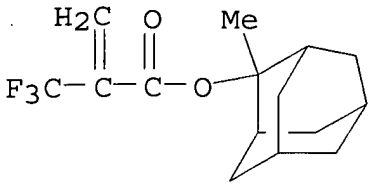
CRN 557104-43-5
CMF C10 H10 F6 O2



CM 2

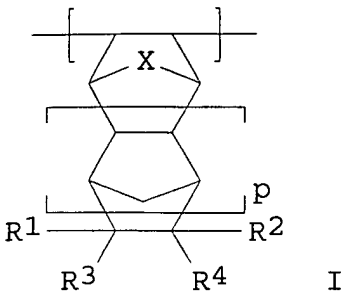
CRN 188739-86-8

CMF C15 H19 F3 O2



IC ICM C08F220-10
ICS C08F234-00; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST fluoromethylacrylate **acid labile** **photoresist** polymer sensitivity; amplified **photoresist** acrylic norbornene polymer oxygen incorporated
IT Fluoropolymers, processes
(acrylic; chem. amplified pos. **photoresists** showing superior high sensitivity to high-energy beams)
IT Photolithography
(chem. amplified pos. **photoresists** showing superior high sensitivity to high-energy beams)
IT Positive **photoresists**
(chem. amplified; chem. amplified pos. **photoresists** showing superior high sensitivity to high-energy beams)
IT X-ray lithography
(soft x ray; chem. amplified pos. **photoresists** showing superior high sensitivity to high-energy beams)
IT **557104-44-6P 557104-46-8P 557104-47-9P**
557104-48-0P 557104-49-1P 557104-50-4P
557104-52-6P 557104-65-1P
(chem. amplified pos. **photoresists** showing superior high sensitivity to high-energy beams)

L9 ANSWER 4 OF 15 HCA COPYRIGHT 2003 ACS on STN
138:376396 Chemically amplified positive **photoresists** suppressing pattern shrinking for ArF excimer laser lithography. Hashimoto, Kazuhiko; Uetani, Yasunori; Fujishima, Hiroaki; Yoshida, Isao (Sumitomo Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003131381 A2 20030509, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-302904 20010928. PRIORITY: JP 2001-243895 20010810.
GI



I

AB The **photoresists** contain alkali-insol. polymers which contain unit I [X = O, S, (m)ethylene; R1, R2 = H, C1-12 alkyl, **acid-labile** group; R3, R4 = H, C1-12 alkyl, **acid-labile** group, R5CO2R' (R5 = direct bond, C1-12 alkylene; R' = H, C1-12 alkyl, **acid-labile** group), or alkyl-, lactone-, anhydride-, or ether-bearing ring; p = 0-2] and become sol. in aq. alkalis upon acid action. The polymers, which can be prepd. without metal-based catalysts, show little shrinkage upon exposure to electron beams in SEM observation.

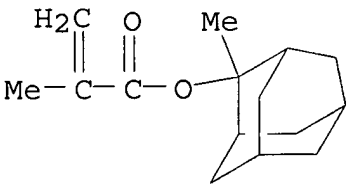
IT **521096-27-5P 521096-28-6P 521096-29-7P**
521096-30-0P
(chem. amplified pos. **photoresists** contg. alicyclic group-contg. polymers and causing no pattern shrinking in SEM observation)

RN 521096-27-5 HCA

CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, polymer with 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

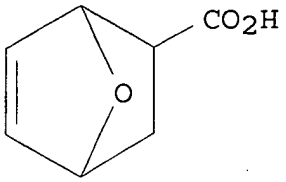
CM 1

CRN 177080-67-0
CMF C15 H22 O2



CM 2

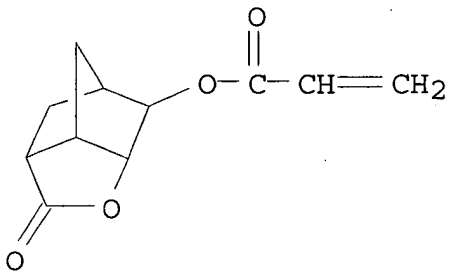
CRN 24363-23-3
CMF C7 H8 O3



RN 521096-28-6 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, polymer with hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

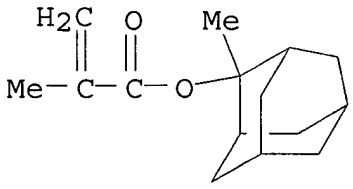
CM 1

CRN 242129-35-7
CMF C11 H12 O4



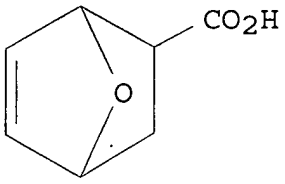
CM 2

CRN 177080-67-0
CMF C15 H22 O2



CM 3

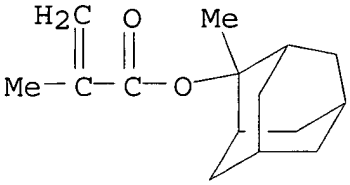
CRN 24363-23-3
CMF C7 H8 O3



RN 521096-29-7 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, methyl ester, polymer with 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

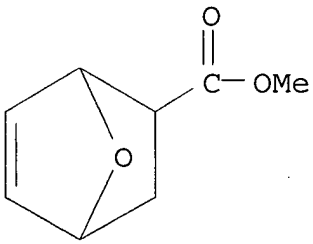
CM 1

CRN 177080-67-0
CMF C15 H22 O2



CM 2

CRN 21987-33-7
CMF C8 H10 O3

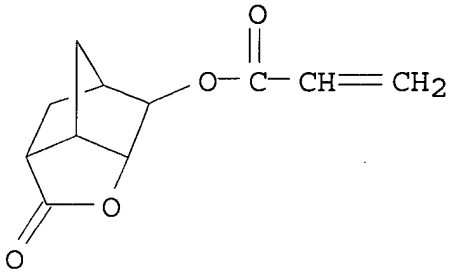


RN 521096-30-0 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, polymer with 2-ethyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate and hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

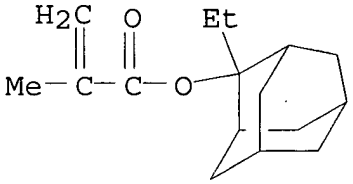
CRN 242129-35-7

CMF C11 H12 O4



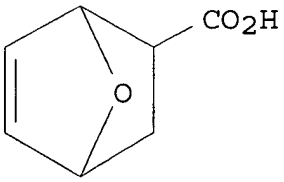
CM 2

CRN 209982-56-9
CMF C16 H24 O2



CM 3

CRN 24363-23-3
CMF C7 H8 O3



IC ICM G03F007-039
ICS G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST amplified **photoresist** SEM observation pattern stability; fluoride laser transparent amplified etching **photoresist**; alicyclic acrylic polymer amplified pos **photoresist**
IT Positive **photoresists**
(chem. amplified; chem. amplified pos. **photoresists** contg. alicyclic group-contg. polymers and causing no pattern

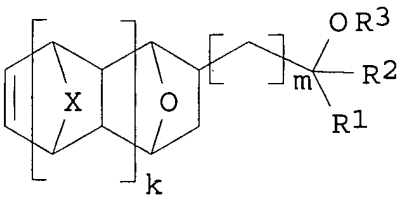
shrinking in SEM observation)

IT 521096-22-0P, exo-3,6-Epoxy-1,2,3,6-tetrahydrophthalic anhydide-2-methyl-2-adamantyl 5-norbornene-2-carboxylate copolymer 521096-24-2P 521096-26-4P **521096-27-5P** **521096-28-6P 521096-29-7P 521096-30-0P**
(chem. amplified pos. **photoresists** contg. alicyclic group-contg. polymers and causing no pattern shrinking in SEM observation)

L9 ANSWER 5 OF 15 HCA COPYRIGHT 2003 ACS on STN

138:115060 Cycloalkenyl epoxy compounds, their polymers, positive **photoresists** containing them with high resolution and good adhesion to substrates, and photolithography using them. Hasegawa, Koji; Kaneo, Takeshi; Watanabe, Takeshi (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003020313 A2 20030124, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-207289 20010709.

GI



I

AB The invention relates to epoxy compds. I (R1, R2 = H, C1-10-alkyl, etc.; R3 = C1-10-alkyl, C1-15-acyl, C1-15-alkoxycarbonyl, etc.; X = CH2, O, S; k = 0, 1; m = 0-5). The **photoresists** are sensitive to ArF excimer laser beams.

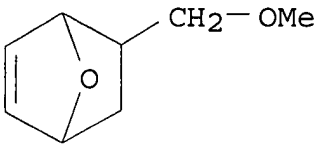
IT **488720-39-4P 488720-40-7P 488720-41-8P**
(cycloalkenyl epoxide polymers for ArF laser-sensitive high-resoln. pos. **photoresists** with good adhesion to substrates)

RN 488720-39-4 HCA

CN 2-Propenoic acid, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 2,5-furandione and 5-(methoxymethyl)-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

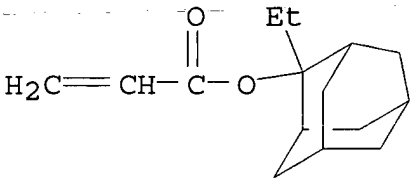
CM 1

CRN 470722-58-8
CMF C8 H12 O2



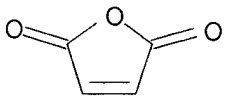
CM 2

CRN 303186-14-3
CMF C15 H22 O2



CM 3

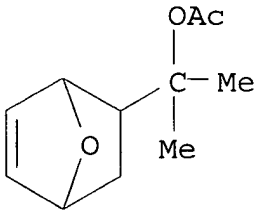
CRN 108-31-6
CMF C4 H2 O3



RN 488720-40-7 HCA
CN 2-Propenoic acid, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with (.alpha.,.alpha.-dimethyl-7-oxabicyclo[2.2.1]hept-5-en-2-yl)methyl acetate and 2,5-furandione (9CI) (CA INDEX NAME)

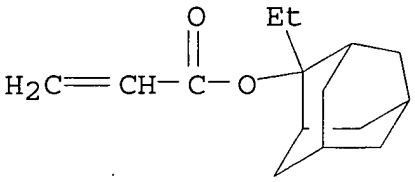
CM 1

CRN 488720-33-8
CMF C11 H16 O3



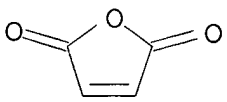
CM 2

CRN 303186-14-3
CMF C15 H22 O2



CM 3

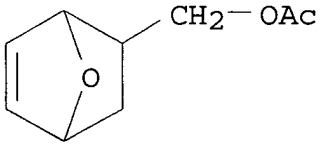
CRN 108-31-6
CMF C4 H2 O3



RN 488720-41-8 HCA
CN 2-Propenoic acid, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 7-oxabicyclo[2.2.1]hept-5-en-2-ylmethyl acetate (9CI) (CA INDEX NAME)

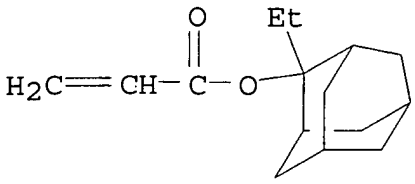
CM 1

CRN 444105-76-4
CMF C9 H12 O3



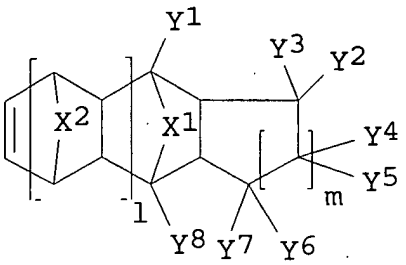
CM 2

CRN 303186-14-3
CMF C15 H22 O2



IC ICM C08F034-00
ICS C08G061-12; G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST cycloalkenyl epoxy UV excimer laser **photoresist**; photolithog pos **resist** oxabicycloheptene polymer ArF
IT Positive **photoresists**
(UV; cycloalkenyl epoxide polymers for ArF laser-sensitive high-resoln. pos. **photoresists** with good adhesion to substrates)
IT Photolithography
(submicron UV; cycloalkenyl epoxide polymers for ArF laser-sensitive high-resoln. pos. **photoresists** with good adhesion to substrates)
IT 89898-05-5P, 7-Oxabicyclo[2.2.1]hept-5-ene-2-methanol 444105-76-4P
470722-58-8P, 7-Oxabicyclo[2.2.1]hept-2-ene, 5-(methoxymethyl)-
488720-32-7P 488720-33-8P
(cycloalkenyl epoxide polymers for ArF laser-sensitive high-resoln. pos. **photoresists** with good adhesion to substrates)
IT 488720-35-0P 488720-36-1P 488720-37-2P 488720-38-3P
488720-39-4P 488720-40-7P 488720-41-8P
488720-43-0P
(cycloalkenyl epoxide polymers for ArF laser-sensitive high-resoln. pos. **photoresists** with good adhesion to substrates)
IT 3282-30-2, Pivaloyl chloride 21987-33-7 84752-05-6
(cycloalkenyl epoxide polymers for ArF laser-sensitive high-resoln. pos. **photoresists** with good adhesion to substrates)

L9 ANSWER 6 OF 15 HCA COPYRIGHT 2003 ACS on STN
138:63829 **Photoresist** monomers, polymers thereof and **photoresist** compositions containing the same. Lee, Geun Su; Jung, Jae Chang; Shin, Ki Soo (S. Korea). U.S. Pat. Appl. Publ. US 2003003379 A1 20030102, 13 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-79348 20020220. PRIORITY: KR 2001-34603 20010619.
GI



I

AB The present invention relates to **photoresist** monomers of formula I (X1-2 = C1-10 alkylene, O,S; Y1-8 = halogen, halogen substituted alkyl; l,m = 0-3) **photoresist** polymers of it, and **photoresist** compns. contg. the same. The **photoresist** compn. has excellent etching resistance, heat resistance and adhesiveness to a wafer, and is developable in aq. tetramethylammonium hydroxide (TMAH) soln. In addn., the **photoresist** compn. has low light absorbance at 157 nm wavelength, and thus is suitable for a photolithog. process using UV light sources such as VUV (157 nm) in fabricating a minute circuit for a high integration semiconductor device.

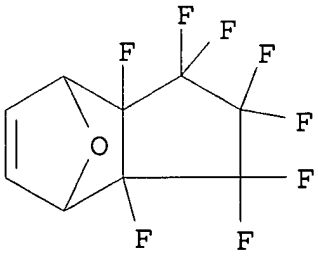
IT **479195-52-3P**
(fluoropolymer for **photoresist** compns.)

RN 479195-52-3 HCA

CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with 1,1,2,2,3,3,3a,7a-octafluoro-2,3,3a,4,7,7a-hexahydro-4,7-epoxy-1H-indene and 1-ethyl-1H-pyrrole-2,5-dione (9CI) (CA INDEX NAME)

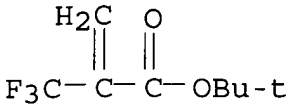
CM 1

CRN 479195-48-7
CMF C9 H4 F8 O



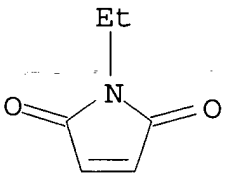
CM 2

CRN 105935-24-8
CMF C8 H11 F3 O2



CM 3

CRN 128-53-0
CMF C6 H7 N O2



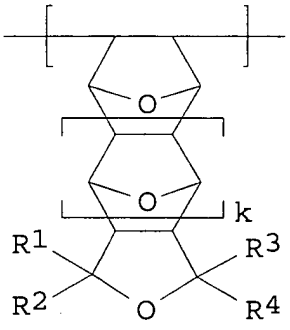
IC ICM G03F007-039
ICS G03F007-30; G03F007-40; G03F007-38
NCL 430018000; 430914000; 430921000; 430326000; 430330000; 430327000; 430296000; 430945000; 430942000; 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photoresist** monomers polymer compn photolithog UV
IT Photolithography
(UV; **photoresist** compns. contg. fluoropolymer for)
IT **Photoresists**
(**photoresist** monomers, polymers thereof and **photoresist** compns. contg. same)
IT 479195-51-2P **479195-52-3P** 479195-53-4P 479195-54-5P
(fluoropolymer for **photoresist** compns.)
IT 78-67-1, 2,2'-Azobisisobutyronitrile 94-36-0, Benzoylperoxide, uses 110-05-4, tert-Butylperoxide 110-22-5, Acetylperoxide 2895-03-6, Laurylperoxide
(initiator; prepn. of polymer for **photoresist** compns.)
IT 41580-58-9 52754-92-4 57835-99-1 57840-38-7, Triphenylsulfonium hexafluoroantimonate 57900-42-2, Triphenylsulfonium hexafluoroarsenate 58109-40-3 62613-15-4 66003-78-9, Triphenylsulfonium triflate 81416-37-7 85342-62-7 116808-67-4, Diphenyl p-methoxyphenylsulfonium triflate 140459-13-8, Dinitrobenzyltosylate 145612-66-4 195245-87-5 255056-42-9
(photoacid generator; **photoresist** compns. contg. fluoropolymers and)
IT 110-02-1, Thiophene 542-92-7, Cyclopentadiene, reactions 559-40-0 29797-09-9, Cyclohexadiene
(prepn. fluoropolymer for **photoresist** compns.)
IT 133205-28-4P 479195-48-7P 479195-49-8P 479195-50-1P

(prepn. fluoropolymer for **photoresist** compns.)

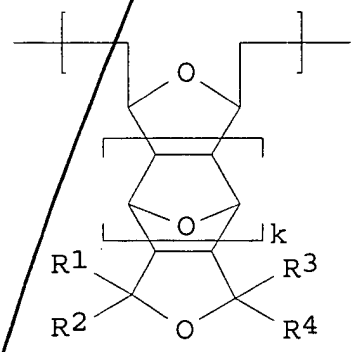
IT 67-68-5, Dimethylsulfoxide, uses 68-12-2, Dimethylformamide, uses 71-43-2, Benzene, uses 78-93-3, Methylethylketone, uses 108-88-3, Toluene, uses 108-94-1, Cyclohexanone, uses 109-99-9, Tetrahydrofuran, uses 120-92-3, Cyclopentanone 123-91-1, Dioxane, uses 1330-20-7, Xylene, uses
(solvent; **photoresist** compns. contg.)

L9 ANSWER 7 OF 15 HCA COPYRIGHT 2003 ACS on STN
138:63824 Polymers, **resist** compositions and patterning process, novel tetrahydrofuran compounds and their preparation. Nishi, Tsunehiro; Kinsho, Takeshi; Tachibana, Seiichiro; Watanabe, Takeru; Hasegawa, Koji; Kobayashi, Tomohiro (Shin-Etsu Chemical Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2002197559 A1 20021226, 40 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-126877 20020422. PRIORITY: JP 2001-124126 20010423; JP 2001-124137 20010423.

GI



I



II

AB A polymer comprises recurring units of formula I or II (R1-4 = H, alkyl; or R1,2, and R3,4 taken together may form a ring with each pair being alkylene; k = 0, 1) and having a Mw of 1,000-500,000. A **resist** compn. comprising the polymer as a base resin is sensitive to high-energy radiation, has excellent sensitivity, resoln., etching resistance, and minimized swell and lends itself to micropatterning with electron beams or deep-UV.

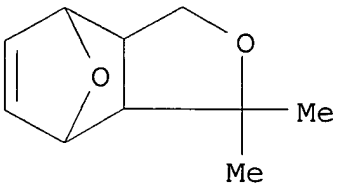
IT **479075-47-3P**
(**photoresist** compns. and patterning process contg. novel THF polymer)

RN 479075-47-3 HCA

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 2,5-furandione and 1,3,3a,4,7,7a-hexahydro-1,1-dimethyl-4,7-epoxyisobenzofuran (9CI) (CA INDEX NAME)

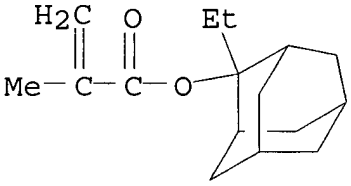
CM 1

CRN 479075-38-2
CMF C10 H14 O2



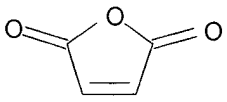
CM 2

CRN 209982-56-9
CMF C16 H24 O2



CM 3

CRN 108-31-6
CMF C4 H2 O3



IC ICM G03F007-038
ICS C08G065-34; G03F007-38; G03F007-40
NCL 430270100; 528425000; 528271000; 525088000; 525165000; 430296000; 430330000; 430311000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photoresist** compn patterning THF compd synthesis
IT **Photoresists**
(**photoresist** compns. and patterning process contg. novel THF polymer)
IT 479075-39-3P 479075-41-7P 479075-42-8P 479075-44-0P
479075-45-1P 479075-46-2P **479075-47-3P** 479075-48-4P
(**photoresist** compns. and patterning process contg. novel THF polymer)
IT 470722-61-3P 479075-38-2P 479075-40-6P

(prepn. of novel THF compd. for **photoresist** compns. and patterning process)

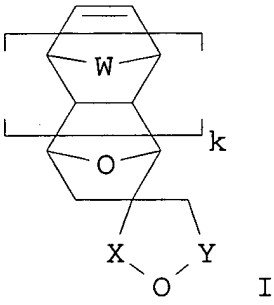
IT 98-59-9, p-Toluenesulfonyl chloride 72081-09-5 115888-24-9 479075-51-9
(prepn. of novel THF compd. for **photoresist** compns. and patterning process)

IT 479075-49-5P 479075-50-8P
(prepn. of novel THF compd. for **photoresist** compns. and patterning process)

L9 ANSWER 8 OF 15 HCA COPYRIGHT 2003 ACS on STN

138:63818 Novel oxanorbornene spiro derivatives and their polymers for use as **resists** for photolithographic patterning.
Hasegawa, Koji; Kaneo, Takeshi; Watanabe, Takeshi; Nishi, Tsunehiro (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002371080 A2 20021226, 39 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-179593 20010614.

GI



I

AB Novel compd. I (W = CH2, O, S; X, Y = CR1R2, C(O); R!-2 = H, C1-10 linear, branched, or cyclic alkyl with optional substitution of H with halogen; R1 + R2 may form aliph. ring, k may be 0) is claimed. Polymers contg. I as comonomers, **resists** mainly comprising the polymers, and photolithog. patterning of the **resists** are also claimed.

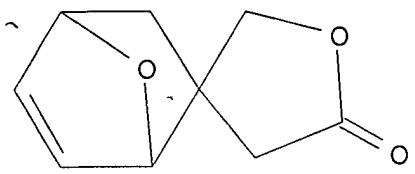
IT **478945-98-1P**
(oxanorbornene spiro deriv. (polymers) for use in chem. amplified **resists** for photolithog. patterning)

RN 478945-98-1 HCA

CN 2-Propenoic acid, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 2,5-furandione and spiro[furan-3(2H),2'-[7]oxabicyclo[2.2.1]hept[5]en]-5(4H)-one (9CI) (CA INDEX NAME)

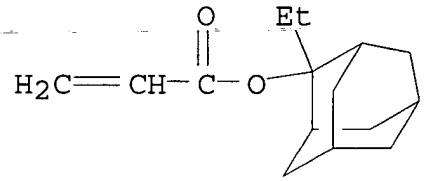
CM 1

CRN 478945-85-6
CMF C9 H10 O3



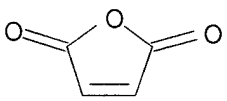
CM 2

CRN 303186-14-3
CMF C15 H22 O2



CM 3

CRN 108-31-6
CMF C4 H2 O3



IC ICM C07D493-20
ICS C07D493-22; C07D495-22; C08F034-02; C08F034-04; C08G061-12; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 27, 38

ST patterning norbornene polymer chem amplified **photoresist**; norbornene spiro compd novel; photolithog patterning norbornene polymer chem amplified **resist**

IT **Photoresists**
(chem.-amplified; oxanorbornene spiro deriv. (polymers) for use in chem. amplified **resists** for photolithog. patterning)

IT Polymers, preparation
(oxonorbornene spiro compds.; oxanorbornene spiro deriv. (polymers) for use in chem. amplified **resists** for photolithog. patterning)

IT 478945-82-3P 478945-85-6P 478945-88-9P 478945-91-4P 478945-94-7P 478945-95-8P
(oxanorbornene spiro deriv. (polymers) for use in chem. amplified **resists** for photolithog. patterning)

IT 478945-83-4P 478945-86-7P 478945-89-0P 478945-92-5P
478945-96-9P **478945-98-1P** 478946-00-8P 478946-03-1P
(oxanorbornene spiro deriv. (polymers) for use in chem. amplified **resists** for photolithog. patterning)

IT 109-99-9, Tetrahydrofuran, reactions 110-00-9, Furan 2170-03-8, Itaconic acid anhydride
(oxanorbornene spiro deriv. (polymers) for use in chem. amplified **resists** for photolithog. patterning)

L9 ANSWER 9 OF 15 HCA COPYRIGHT 2003 ACS on STN
137:317926 Polymer, **resist** composition and patterning process.
Nishi, Tsunehiro; Nakashima, Mutsuo; Tachibana, Seiichiro; Funatsu, Kenji (Shin-Etsu Chemical Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2002150835 A1 20021017, 38 pp. (English). CODEN: USXXCO.
APPLICATION: US 2002-73223 20020213. PRIORITY: JP 2001-37247 20010214; JP 2001-37262 20010214; JP 2001-37271 20010214.

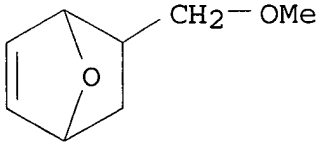
AB A novel polymer is obtained by copolymg. a (meth)acrylic acid deriv. with a vinyl ether compd., an allyl ether compd. and an oxygen-contg. alicyclic olefin compd. A **photoresist** compn. comprising the polymer as a base resin is sensitive to high-energy radiation, has excellent sensitivity, resoln., etching resistance, and minimized swell and lends itself to micropatterning with electron beams or deep-UV.

IT **470722-59-9P 470722-60-2P 470722-62-4P**
470722-64-6P 470722-65-7P 470722-66-8P
470722-67-9P 470722-68-0P
(polymer for **photoresist** compn. and patterning process)

RN 470722-59-9 HCA
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 5-(methoxymethyl)-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

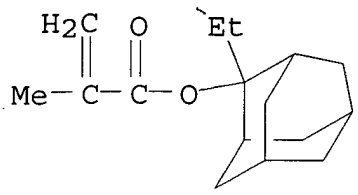
CM 1

CRN 470722-58-8
CMF C8 H12 O2



CM 2

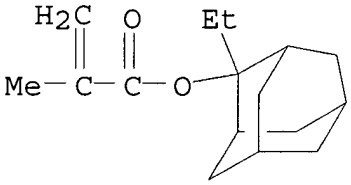
CRN 209982-56-9
CMF C16 H24 O2



RN 470722-60-2 HCA
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 7-oxabicyclo[2.2.1]hept-5-ene-2-methanol (9CI) (CA INDEX NAME)

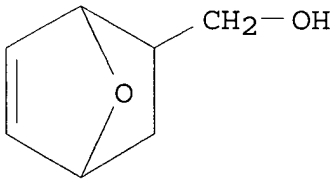
CM 1

CRN 209982-56-9
CMF C16 H24 O2



CM 2

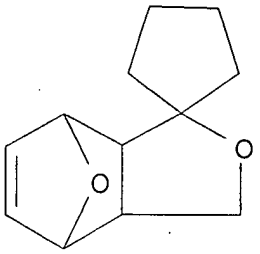
CRN 89898-05-5
CMF C7 H10 O2



RN 470722-62-4 HCA
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 3'a,4',7',7'a-tetrahydrospiro[cyclopentane-1,1'(3'H)-[4,7]epoxyisobenzofuran] (9CI) (CA INDEX NAME)

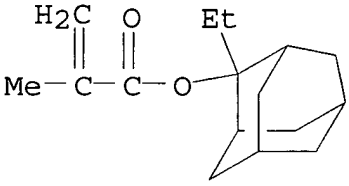
CM 1

CRN 470722-61-3
CMF C12 H16 O2



CM 2

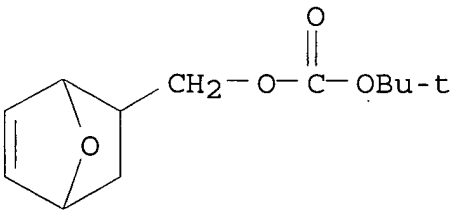
CRN 209982-56-9
CMF C16 H24 O2



RN 470722-64-6 HCA
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 1,1-dimethylethyl 7-oxabicyclo[2.2.1]hept-5-en-2-ylmethyl carbonate (9CI) (CA INDEX NAME)

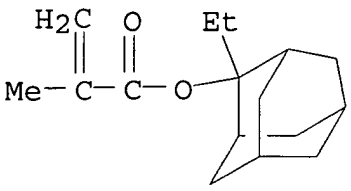
CM 1

CRN 470722-63-5
CMF C12 H18 O4



CM 2

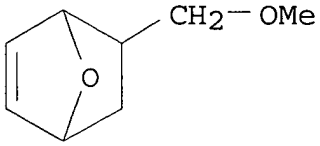
CRN 209982-56-9
CMF C16 H24 O2



RN 470722-65-7 HCA
CN 2-Propenoic acid, 2-methyl-, 2-ethylbicyclo[2.2.1]hept-2-yl ester, polymer with 5-(methoxymethyl)-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

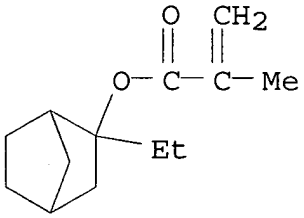
CM 1

CRN 470722-58-8
CMF C8 H12 O2



CM 2

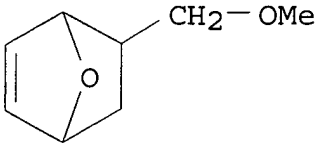
CRN 330595-98-7
CMF C13 H20 O2



RN 470722-66-8 HCA
CN 2-Propenoic acid, 2-methyl-, 1-cyclohexylcyclopentyl ester, polymer with 5-(methoxymethyl)-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

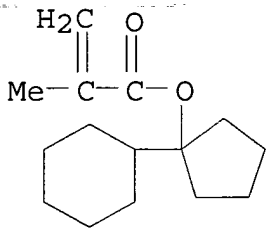
CM 1

CRN 470722-58-8
CMF C8 H12 O2



CM 2

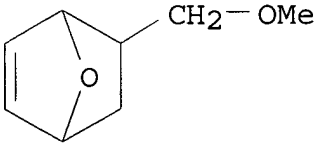
CRN 366808-98-2
CMF C15 H24 O2



RN 470722-67-9 HCA
CN 2-Propenoic acid, 2-methyl-, polymer with 2-ethyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate and 5-(methoxymethyl)-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

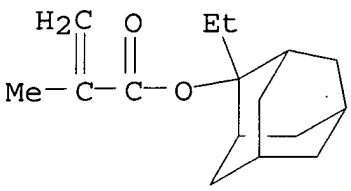
CM 1

CRN 470722-58-8
CMF C8 H12 O2



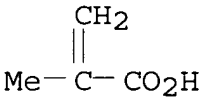
CM 2

CRN 209982-56-9
CMF C16 H24 O2



CM 3

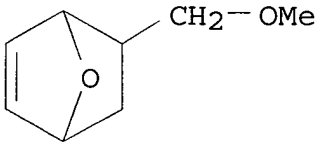
CRN 79-41-4
CMF C4 H6 O2



RN 470722-68-0 HCA
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 5-(methoxymethyl)-7-oxabicyclo[2.2.1]hept-2-ene and tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

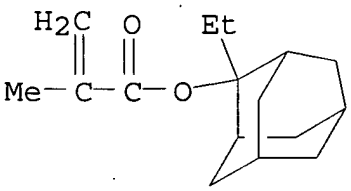
CM 1

CRN 470722-58-8
CMF C8 H12 O2



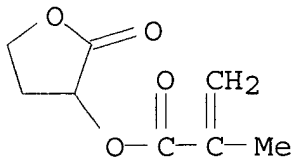
CM 2

CRN 209982-56-9
CMF C16 H24 O2



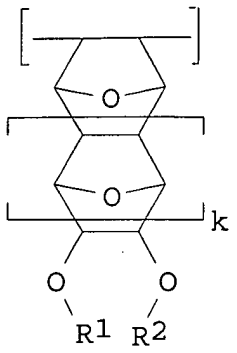
CM 3

CRN 195000-66-9
CMF C8 H10 O4

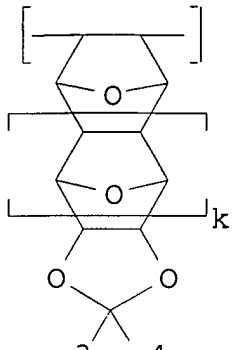


IC ICM G03F007-038
ICS G03F007-20; G03F007-38; G03F007-40; G03F007-30
NCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photoresist** polymer compn photolithog
IT **Photoresists**
(polymer for **photoresist** compn. and patterning process)
IT Photolithography
(vacuum UV; polymer for **photoresist** compn. and patterning process)
IT 470722-46-4P 470722-47-5P 470722-48-6P 470722-49-7P
470722-50-0P 470722-51-1P 470722-52-2P 470722-53-3P
470722-54-4P 470722-55-5P 470722-56-6P 470722-57-7P
470722-59-9P 470722-60-2P 470722-62-4P
470722-64-6P 470722-65-7P 470722-66-8P
470722-67-9P 470722-68-0P 470722-69-1P
470722-70-4P 470722-71-5P 470722-72-6P 470722-73-7P
470722-74-8P 470722-75-9P 470722-76-0P
(polymer for **photoresist** compn. and patterning process)

L9 ANSWER 10 OF 15 HCA COPYRIGHT 2003 ACS on STN
137:192764 Polymer, **resist** composition and patterning process.
Nishi, Tsunehiro; Kinsho, Takeshi (Japan). U.S. Pat. Appl. Publ. US 2002115821 A1 20020822, 34 pp. (English). CODEN: USXXCO.
APPLICATION: US 2001-3117 20011206. PRIORITY: JP 2000-372406 20001207.
GI



I



II

AB The present invention relates to a polymer comprising recurring units of I and/or II (R1,2 = H, C1-15 alkyl, acyl, alkylsulfonyl, C2-15 alkoxycarbonyl, alkoxyalkyl which may have halogen substituents; R3,4 = H, C1-15 alkyl, alkoxy, C2-15 , alkoxyalkyl which may have halogen substituents, and R3,4 may together bond with the carbon atom to form an aliph. ring, or R3,4 taken together, may be an oxygen atom; k=0 or 1), and having a Mw of 1,000-500,000. A **resist** compn. comprising the polymer as a base resin is sensitive to high-energy radiation, has excellent sensitivity, resoln., etching resistance, and minimized swell and lends itself to micropatterning with electron beams or deep-UV.

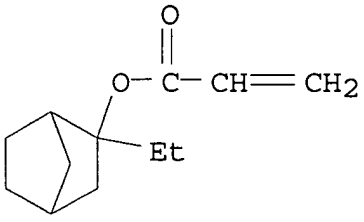
IT **449173-04-0P 449173-05-1P**
(polymer, **resist** compn. for micropatterning process)

RN 449173-04-0 HCA

CN 2-Propenoic acid, 2-ethylbicyclo[2.2.1]hept-2-yl ester, polymer with 2,5-furandione and 3a,4,7,7a-tetrahydro-2,2-dimethyl-4,7-epoxy-1,3-benzodioxole (9CI) (CA INDEX NAME)

CM 1

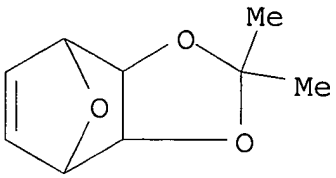
CRN 449173-03-9
CMF C12 H18 O2



CM 2

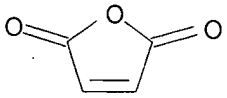
CRN 449172-91-2

CMF C9 H12 O3



CM 3

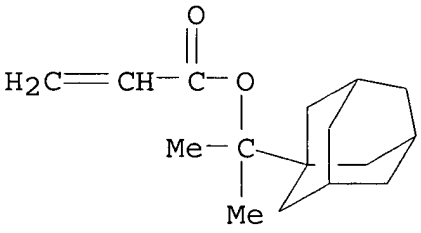
CRN 108-31-6
CMF C4 H2 O3



RN 449173-05-1 HCA
CN 2-Propenoic acid, 1-methyl-1-tricyclo[3.3.1.13,7]dec-1-ylethyl ester, polymer with 3a,4,7,7a-tetrahydro-4,7-epoxy-1,3-benzodioxol-2-one (9CI) (CA INDEX NAME)

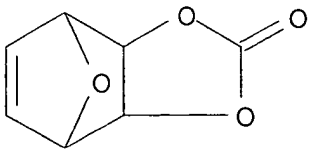
CM 1

CRN 300833-10-7
CMF C16 H24 O2



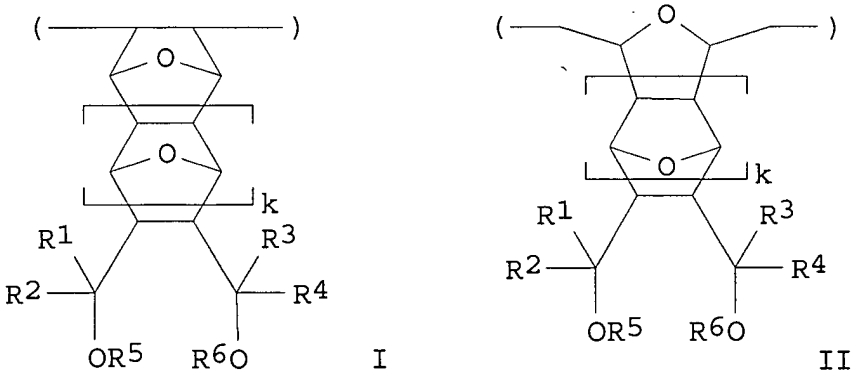
CM 2

CRN 50269-96-0
CMF C7 H6 O4



IC ICM C08G065-34
NCL 528425000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photoresist** photolithog resin
IT Photolithography
(UV; polymer, **resist** compn. for micropatterning process)
IT **Photoresists**
(polymer, **resist** compn. for micropatterning process)
IT 449172-89-8P 449172-90-1P 449172-92-3P 449172-94-5P
449172-95-6P 449172-96-7P 449172-98-9P 449172-99-0P
449173-01-7P 449173-02-8P **449173-04-0P**
449173-05-1P
(polymer, **resist** compn. for micropatterning process)

L9 ANSWER 11 OF 15 HCA COPYRIGHT 2003 ACS on STN
137:192763 Polymer, **resist** composition and patterning process. Nishi, Tsunehiro; Nakashima, Mutsuo; Kobayashi, Tomohiro (Shin-Etsu Chemical Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2002115807 A1 20020822, 35 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-998200 20011203. PRIORITY: JP 2000-368628 20001204.
GI



AB The present invention relates to a polymer comprising recurring units of formula I or II (R1-4 = H, C1-15 alkyl, R1,2, and R3,4, taken together, may form a ring; R5,6 = H, C1-15 alkyl, acyl, alkylsulfonyl groups, C2-15 alkoxycarbonyl or alkoxyalkyl groups which may have halogen substituents; and k=0 or 1); and having a Mw of 1,000-500,000. A **resist** compn. comprising the polymer as a base resin is sensitive to high-energy radiation, has excellent sensitivity, resoln., etching resistance, and minimized swell and lends itself to micropatterning with electron beams or deep-UV.
IT **449165-82-6P**

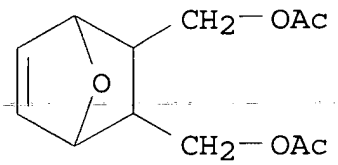
(polymer, **resist** compn. for micropatterning process)

RN 449165-82-6 HCA

CN 2-Propenoic acid, 2-methyl-, 2-ethylbicyclo[2.2.1]hept-2-yl ester, polymer with 2,5-furandione and 7-oxabicyclo[2.2.1]hept-5-ene-2,3-diylbis(methylene) diacetate (9CI) (CA INDEX NAME)

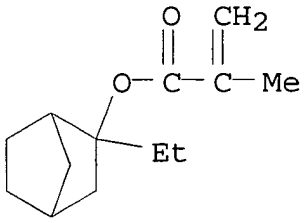
CM 1

CRN 449165-64-4
CMF C12 H16 O5



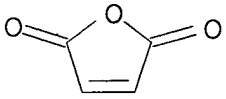
CM 2

CRN 330595-98-7
CMF C13 H20 O2



CM 3

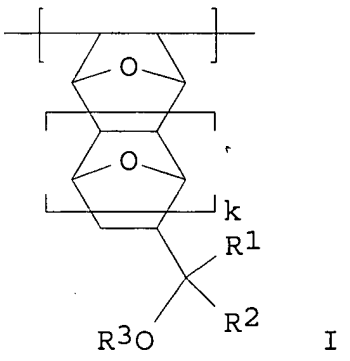
CRN 108-31-6
CMF C4 H2 O3



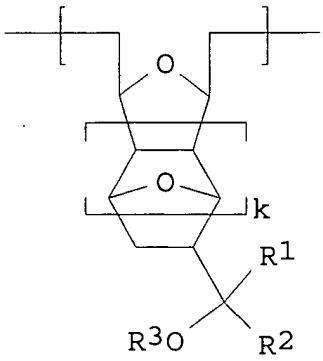
IC ICM C08F124-00
NCL 526266000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photoresist** photolithog electron beam UV
IT Photolithography
(UV; polymer, **resist** compn. for micropatterning

process)
IT **Photoresists**
(polymer, **resist** compn. for micropatterning process)
IT 449165-65-5P 449165-69-9P 449165-73-5P 449165-76-8P
449165-78-0P 449165-80-4P **449165-82-6P** 449165-84-8P
(polymer, **resist** compn. for micropatterning process)

L9 ANSWER 12 OF 15 HCA COPYRIGHT 2003 ACS on STN
137:132115 Polymer, **resist** composition and patterning process. Nishi, Tsunehiro; Nakashima, Mutsuo; Kobayashi, Tomohiro (Shin-Etsu Chemical Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2002102493 A1 20020801, 35 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-221 20011204. PRIORITY: JP 2000-368672 20001204.
GI



I

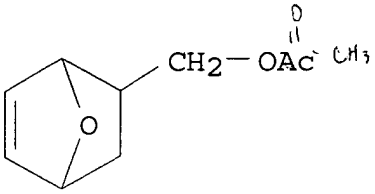


II

AB The present invention relates to a polymer comprising recurring units of I, II (R1,2 = H, C1-15 alkyl, R1,2 taken together, may form a ring; R3 = H, C1-15 alkyl, acyl or alkylsulfonyl or C2-15 alkoxycarbonyl or alkoxyalkyl which may have halogen substituents; not all R1-3 are hydrogen; k = 0 or 1) and having a Mw of 1,000-500,000.. The present invention relates to a **photoresist** compn. comprising the polymer as a base resin which is sensitive to high-energy radiation, has excellent sensitivity, resoln., etching resistance, and minimized swell and lends itself to micropatterning with electron beams or deep-UV.
IT **444105-83-3P**
(polymer **photoresist** compn. for patterning process)
RN 444105-83-3 HCA
CN 2-Propenoic acid, 2-methyl-, 2-ethylbicyclo[2.2.1]hept-2-yl ester, polymer with 2,5-furandione and 7-oxabicyclo[2.2.1]hept-5-ene-2-methyl acetate (9CI) (CA INDEX NAME)

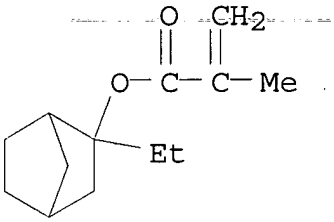
CM 1

CRN 444105-76-4
CMF C9 H12 O3



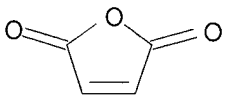
CM 2

CRN 330595-98-7
CMF C13 H20 O2



CM 3

CRN 108-31-6
CMF C4 H2 O3

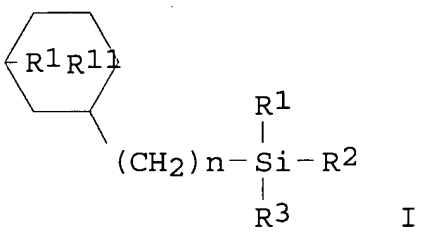


IC ICM G03F007-038
ICS G03F007-38; G03F007-40; G03F007-30
NCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photoresists** resin photolithog
IT Photolithography
(UV; polymer **photoresist** compn. for patterning process)
IT **Photoresists**
(polymer **photoresist** compn. for patterning process)
IT 444045-74-3P 444045-76-5P 444045-78-7P 444105-77-5P
444105-79-7P 444105-81-1P **444105-83-3P** 444105-85-5P
(polymer **photoresist** compn. for patterning process)

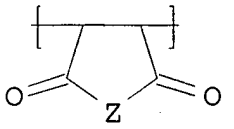
L9 ANSWER 13 OF 15 HCA COPYRIGHT 2003 ACS on STN
136:191692 Positive-working **photoresist** compositions with high resolution and excellent dimensional accuracy. Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP

2002055454 A2 20020220, 43 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 2000-244683 20000811.

GI



I



II

AB The compns. contain polymers contg. (a) structural repeating unit I (R', R" = H, (un)substituted alkyl, R' + R" may form ring via alkylene, O, S; R1-3 = H, alkyl, alkoxy, halogen, trialkylsilyl, trialkylsilyloxy; n = integer of 0-3) and (b) structural repeating unit giving out acid groups on dissocn. with acid (preferable Markush given). The polymers in the compns. may also contain (c) structural repeating unit II (Z = O, :NR4; R4 = H, OH, linear or branched alkyl, O3SR5; R5 = alkyl, trihalomethyl). Also claimed is a **photoresist** compn. contg. (A) the above stated polymers, (B) photoacid generators, and (C) org. solvents that dissolve A and B.

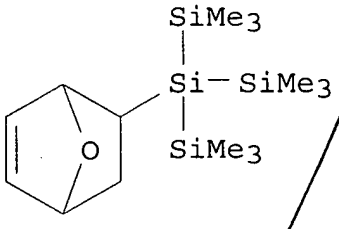
IT **400632-99-7 400633-03-6**
(silylalkyl-contg. polymers for pos. **photoresists** showing high resoln.)

RN 400632-99-7 HCA

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione and 1,1,1,3,3,3-hexamethyl-2-(7-oxabicyclo[2.2.1]hept-5-en-2-yl)-2-(trimethylsilyl)trisilane (9CI) (CA INDEX NAME)

CM 1

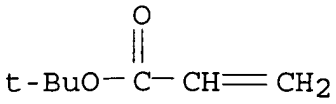
CRN 400632-98-6
CMF C15 H34 O Si4



CM 2

CRN 1663-39-4

CMF C7 H12 O2



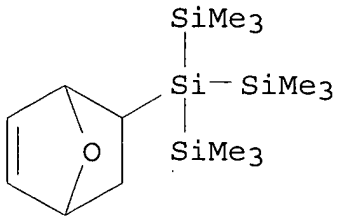
CM 3

CRN 108-31-6
CMF C4 H2 O3

RN 400633-03-6 HCA
CN 2-Propenoic acid, tetrahydro-2H-pyran-2-yl ester, polymer with 2,5-furandione and 1,1,1,3,3,3-hexamethyl-2-(7-oxabicyclo[2.2.1]hept-5-en-2-yl)-2-(trimethylsilyl)trisilane (9CI) (CA INDEX NAME)

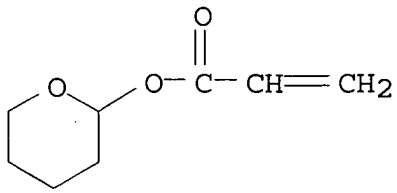
CM 1

CRN 400632-98-6
CMF C15 H34 O Si4



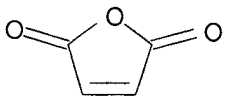
CM 2

CRN 52858-57-8
CMF C8 H12 O3



CM 3

CRN 108-31-6
CMF C4 H2 O3



IC ICM G03F007-039
ICS C08F232-04; C08F234-00; C08K005-00; C08L043-04; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST pos **photoresist** silylcyclohexane maleic anhydride copolymer
IT Positive **photoresists**
(silylalkyl-contg. polymers for pos. **photoresists** showing high resoln.)
IT 13891-29-7, Triphenylsulfonium tosylate 66003-76-7, Diphenyliodonium triflate 144089-15-6, Triphenylsulfonium perfluorooctanesulfonate 144317-44-2, Triphenylsulfonium nonafluorobutanesulfonate 153698-46-5, Triphenylsulfonium pentafluorophenylsulfonate 197447-16-8, Triphenylsulfonium 2,4,6-triisopropylphenylsulfonate 251463-24-8 287925-54-6, Bis(p-tert-amylphenyl)iodonium tosylate 287925-55-7, Triphenylsulfonium p-dodecylphenylsulfonate 335385-79-0
(photoacid generator; silylalkyl-contg. polymers for pos. **photoresists** showing high resoln.)
IT 400633-31-0P 400633-35-4P
(silylalkyl-contg. polymers for pos. **photoresists** showing high resoln.)
IT 400632-88-4 400632-90-8 400632-91-9 400632-92-0 400632-94-2 **400632-99-7 400633-03-6** 400633-07-0 400633-11-6 400633-15-0 400633-18-3 400633-19-4 400633-23-0 400633-26-3
(silylalkyl-contg. polymers for pos. **photoresists** showing high resoln.)

L9 ANSWER 14 OF 15 HCA COPYRIGHT 2003 ACS on STN
135:280511 Positive-working **photoresist** compositions showing high resolution and high sensitivity and excellent storage stability. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001272784 A2 20011005, 62 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-385724 20001219. PRIORITY: JP 1999-363302 19991221; JP 2000-10773 20000119; JP 2000-10774 20000119.
AB The compns. contain (A) compds. generating acid on irradn. of actinic ray or radiation, (B) polymers contg. structural repeating unit CO2CR1R2(CR3R4)mSiR5R6R7 (R1-2 = (cyclic) alkyl; R3-4 = H, (cyclic) alkyl; R1 + R2, R3 + R4 may form cyclic alkyl; R5-7 =

(cyclic) alkyl, aryl, trialkylsilyl(oxy); m = integer of 1-6) and increasing soly. in alk. developing agents by reaction with acids, (C) org. basic compds., and (D) .gtoreq.1 of F-contg. surfactants, Si-contg. surfactants, and nonionic surfactants. Preferable structural repeating units also contained in the polymers are given in Markush. Also claimed are (1) compns. consisting of (A') acid-generating sulfonium salts Rs1S+ Rs2Rs3 Z- (Rs1-3 = (un)substituted alkyl or aryl; Rs1 + Rs2 may bond via single bond or bonding group; Z- = anion) and polymers B and (2) compns. consisting of acid generators A, polymers B, and certain surfactants given in the document. The compns. are useful in manuf. of semiconductor devices, printed circuits, liq. crystal panels, etc.

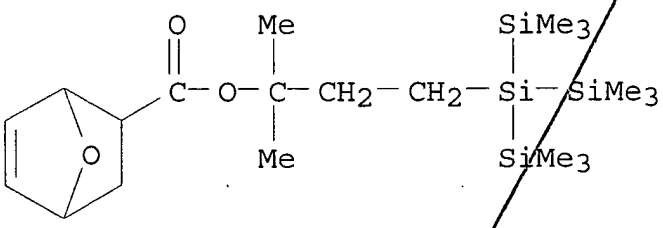
IT **363616-83-5P**
(alk.-developing silyl-contg. polymer pos. **photoresists** having storage stability)

RN 363616-83-5 HCA

CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethyl-3-[2,2,2-trimethyl-1,1-bis(trimethylsilyl)disilanyl]propyl ester, polymer with ethoxymethyl 2-methyl-2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

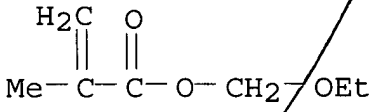
CM 1

CRN 363616-67-5
CMF C21 H44 O3 Si4



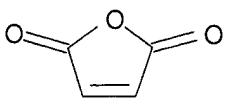
CM 2

CRN 76392-16-0
CMF C7 H12 O3



CM 3

CRN 108-31-6
CMF C4 H2 O3



IC ICM G03F007-039
ICS C08K005-00; C08L101-08; G03F007-004; G03F007-075; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST pos **photoresist** alk soluble silyl contg polymer; acid generator pos **photoresist** storage stable; sulfonium salt acid generator pos **photoresist**
IT Polysiloxanes, uses
(KP 341, surfactant; alk.-developing silyl-contg. polymer pos. **photoresists** having storage stability)
IT Positive **photoresists**
(alk.-developing silyl-contg. polymer pos. **photoresists** having storage stability)
IT Sulfonium compounds
(alk.-developing silyl-contg. polymer pos. **photoresists** having storage stability)
IT Surfactants
(fluorosurfactants; alk.-developing silyl-contg. polymer pos. **photoresists** having storage stability)
IT Surfactants
(nonionic, surfactant; alk.-developing silyl-contg. polymer pos. **photoresists** having storage stability)
IT Fluoropolymers, uses
(surfactant; alk.-developing silyl-contg. polymer pos. **photoresists** having storage stability)
IT 14159-45-6P 39153-56-5P 66003-76-7P 66003-78-9P 67695-82-3P
138529-81-4P 144089-15-6P 153698-46-5P 177786-98-0P
206861-54-3P 241806-75-7P 258341-95-6P 258341-99-0P
279218-73-4P 279218-74-5P 279218-75-6P 301525-08-6P
312386-77-9P 324771-13-3P 350251-56-8P 350251-57-9P
363616-18-6P
(acid generator; alk.-developing silyl-contg. polymer pos. **photoresists** having storage stability)
IT 263713-67-3P 363616-30-2P 363616-32-4P 363616-34-6P
363616-36-8P 363616-38-0P 363616-40-4P 363616-42-6P
363616-45-9P 363616-47-1P 363616-49-3P 363616-51-7P
363616-53-9P 363616-56-2P 363616-59-5P 363616-62-0P
363616-65-3P 363616-68-6P 363616-71-1P 363616-74-4P
363616-76-6P 363616-77-7P 363616-78-8P 363616-81-3P
363616-82-4P **363616-83-5P** 363616-85-7P 363616-86-8P
(alk.-developing silyl-contg. polymer pos. **photoresists** having storage stability)
IT 484-47-9, 2,4,5-Triphenyl imidazole 1122-58-3, 4-Dimethylamino pyridine 6674-22-2, 1,8-Diazabicyclo[5.4.0]-7-undecene
(alk.-developing silyl-contg. polymer pos. **photoresists**

having storage stability)

IT 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate 97-64-3, Ethyl lactate 108-32-7, Propylene carbonate 110-43-0, 2-Heptanone 123-86-4, Butyl acetate 1320-67-8, Propylene glycol monomethyl ether 14272-48-1, 2-Ethoxyethyl propionate 84540-57-8, Propylene glycol monomethyl ether acetate 98516-33-7, Propylene glycol monomethyl ether propionate
(solvent; alk.-developing silyl-contg. polymer pos. **photoresists** having storage stability)

IT 9016-45-9, Polyoxyethylene nonylphenyl ether 137462-24-9, Megafac F176 216679-67-3, Megafac R08 364039-09-8, Troysol S 336
(surfactant; alk.-developing silyl-contg. polymer pos. **photoresists** having storage stability)

L9 ANSWER 15 OF 15 HCA COPYRIGHT 2003 ACS on STN

134:245236 Photopolymerizable composition and chemical amplification-type **photoresist** using it. Chung, Dong Hang; Choi, Sang Joon; Lee, Shi Hung; Lee, Sook (Samsung Electronics Co., Ltd., S. Korea). Jpn. Kokai Tokkyo Koho JP 2001075285 A2 20010323, 17 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-231006 20000731. PRIORITY: KR 1999-31060 19990729.

AB The photosensitive polymer (wt. av. mol. wt. 3000-100,000) is a copolymer of norbornene ester substituted with C1-12 aliph. alc. and maleic acid anhydride. The polymer may have a norbornene deriv. and an (meth)acrylic acid (ester) as other monomers. The chem. amplification **resist** comprises the polymer and 1-15 wt.% (based on the polymer) of a photoacid generator. The compn. shows good adhesion with the substrate, wettability with the developer, and good etching resistance.

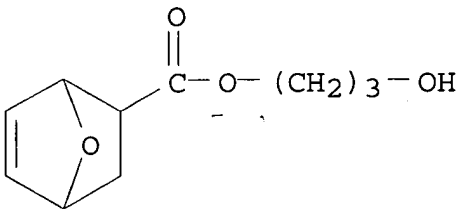
IT **329955-98-8P 329956-02-7P 329956-04-9P 329956-06-1P 329956-08-3P**
(**photoresist** compn. contg. polymer from norbornene ester and maleic anhydride and photoacid generator)

RN 329955-98-8 HCA

CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 3-hydroxypropyl ester, polymer with 1,1-dimethylethyl 2-methyl-2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

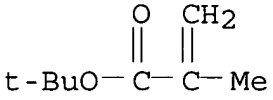
CM 1

CRN 256490-50-3
CMF C10 H14 O4



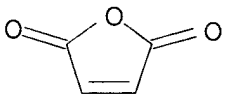
CM 2

CRN 585-07-9
CMF C8 H14 O2



CM 3

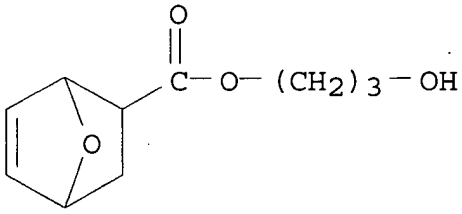
CRN 108-31-6
CMF C4 H2 O3



RN 329956-02-7 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 3-hydroxypropyl ester, polymer with 2,5-furandione and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

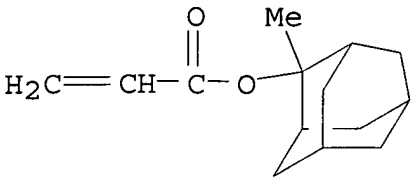
CM 1

CRN 256490-50-3
CMF C10 H14 O4



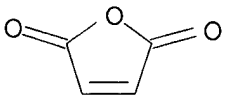
CM 2

CRN 249562-06-9
CMF C14 H20 O2



CM 3

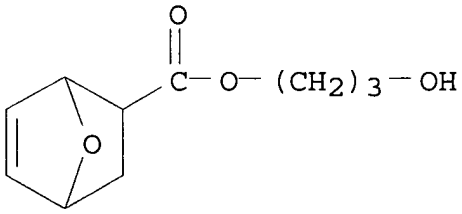
CRN 108-31-6
CMF C4 H2 O3



RN 329956-04-9 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 3-hydroxypropyl ester, polymer with 1,1-dimethylethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 1,1-dimethylethyl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

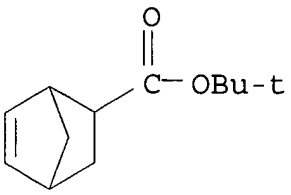
CM 1

CRN 256490-50-3
CMF C10 H14 O4



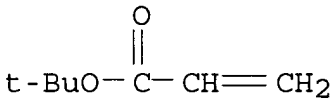
CM 2

CRN 154970-45-3
CMF C12 H18 O2



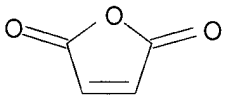
CM 3

CRN 1663-39-4
CMF C7 H12 O2



CM 4

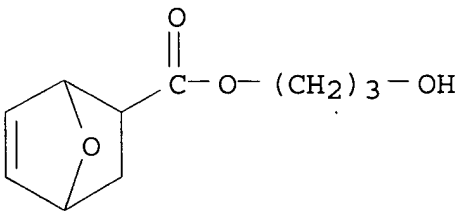
CRN 108-31-6
CMF C4 H2 O3



RN 329956-06-1 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 3-hydroxypropyl ester, polymer with 1,1-dimethylethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 2,5-furandione and rel-(1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-propenoate (9CI) (CA INDEX NAME)

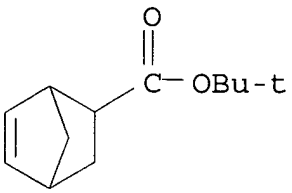
CM 1

CRN 256490-50-3
CMF C10 H14 O4



CM 2

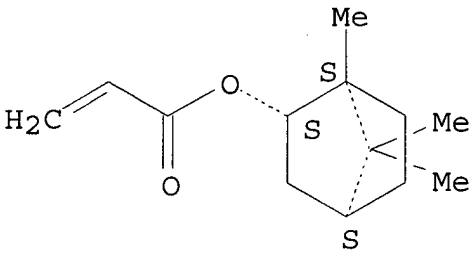
CRN 154970-45-3
CMF C12 H18 O2



CM 3

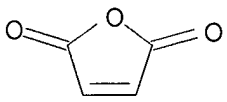
CRN 5888-33-5
CMF C13 H20 O2

Relative stereochemistry.



CM 4

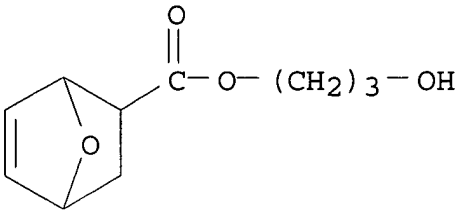
CRN 108-31-6
CMF C4 H2 O3



RN 329956-08-3 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 3-hydroxypropyl ester, polymer with 1,1-dimethylethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 2,5-furandione and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

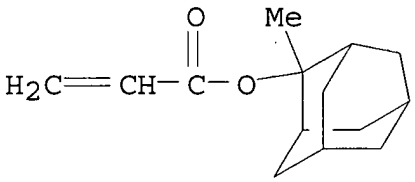
CM 1

CRN 256490-50-3
CMF C10 H14 O4



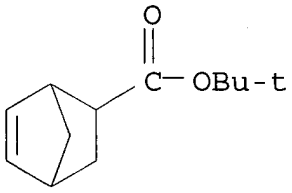
CM 2

CRN 249562-06-9
CMF C14 H20 O2



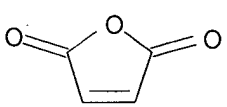
CM 3

CRN 154970-45-3
CMF C12 H18 O2



CM 4

CRN 108-31-6
CMF C4 H2 O3



IC ICM G03F007-039
ICS C08F220-18; C08F222-06; C08F232-04; G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and

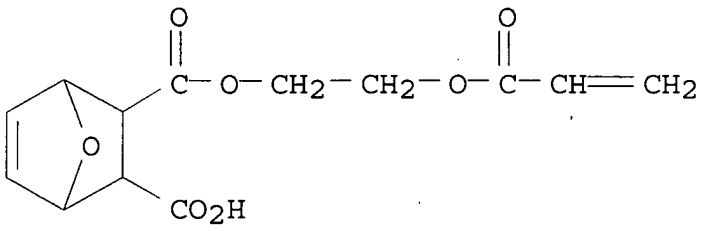
Other Reprographic Processes)
Section cross-reference(s): 38
ST **photoresist** norbornene ester maleic anhydride copolymer; photoacid generator **photoresist**
IT **Photoresists**
(**photoresist** compn. contg. polymer from norbornene ester and maleic anhydride and photoacid generator)
IT 102-71-6, Triethanolamine, uses 111-42-2, Diethanolamine, uses 121-44-8, Triethylamine, uses 1116-40-1, Triisobutylamine 25549-16-0, Triisooctylamine
(**photoresist** compn. contg. polymer from norbornene ester and maleic anhydride and photoacid generator)
IT 256490-71-8P 329955-96-6P **329955-98-8P** 329956-00-5P **329956-02-7P 329956-04-9P 329956-06-1P** **329956-08-3P** 329956-10-7P 329956-12-9P 329956-14-1P
(**photoresist** compn. contg. polymer from norbornene ester and maleic anhydride and photoacid generator)
IT 34684-40-7, Succinimidyl triflate 54730-01-7 66003-76-7, Diphenyliodonium triflate 66003-78-9, Triphenylsulfonium triflate 141339-54-0 162845-55-8, Triphenylsulfonium antimonate 250345-41-6 259229-69-1
(**photoresist** compn. contg. polymer from norbornene ester and maleic anhydride and photoacid generator)

=> d l10 1-14 cbib abs hitstr hitrn

L10 ANSWER 1 OF 14 HCA COPYRIGHT 2003 ACS on STN
136:142641 Negative working photosensitive lithographic printing plate. Oshima, Yasuhito (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1176467 A1 20020130, 47 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2001-116791 20010723. PRIORITY: JP 2000-228902 20000728.
AB A neg. working photosensitive lithog. printing plate is disclosed, which comprises a support having thereon at least one photosensitive layer contg. a polymeric binder having repeating units: (R1MeC)-C(:O)AR2-(COOH)n (R1 = H, Me group; R2 = C3-30 hydrocarbon group which has an alicyclic structure and a valence of n + 1; A =O, -NR3- (R3 = H, C1-10 monovalent hydrocarbon group); and n = 1-5). The neg. working photosensitive lithog. printing plate can attain both high productivity and high printing durability. It is esp. suitable for drawing with laser light.
IT **393545-89-6P 393546-28-6P**
(binder resin for neg. working photosensitive lithog. printing plate)
RN 393545-89-6 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, mono[2-[(1-oxo-2-propenyl)oxy]ethyl] ester, polymer with 2-propenyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

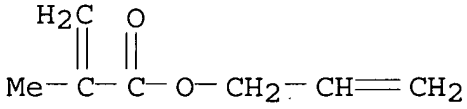
CM 1

CRN 393545-88-5
CMF C13 H14 O7



CM 2

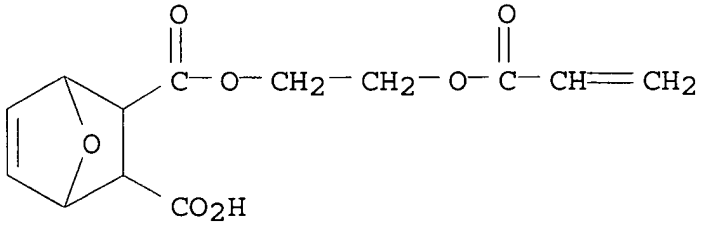
CRN 96-05-9
CMF C7 H10 O2



RN 393546-28-6 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, mono[2-[(1-oxo-2-propenyl)oxy]ethyl] ester, polymer with ethenylbenzene and 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl 3-oxobutanoate (9CI) (CA INDEX NAME)

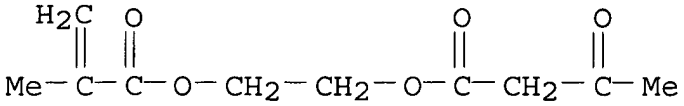
CM 1

CRN 393545-88-5
CMF C13 H14 O7



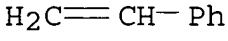
CM 2

CRN 21282-97-3
CMF C10 H14 O5



CM 3

CRN 100-42-5
CMF C8 H8



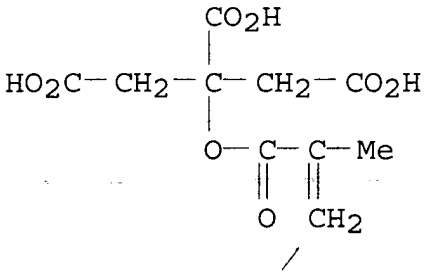
IT **393545-89-6P 393546-28-6P**
(binder resin for neg. working photosensitive lithog. printing plate)

L10 ANSWER 2 OF 14 HCA COPYRIGHT 2003 ACS on STN
134:290081 Synthesis and antitumor and antiangiogenesis activity of polymers containing methacryloyl-2-oxy-1,2,3-propane tricarboxylic acid. Lee, Sun-Mi; Chung, Il-Doo; Lee, Neung-Ju; Ha, Chang-Sik; Lee, Chi-Ho; Cho, Won-Jei (Department of Polymer Science and Engineering, Pusan National University, Pusan, 609-735, S. Korea). Polymer International, 50(1), 119-128 (English) 2001. CODEN: PLYIEI. ISSN: 0959-8103. Publisher: John Wiley & Sons Ltd..
AB A new monomer, methacryloyl-2-oxy-1,2,3-propane tricarboxylic acid (MTCA), was prepd. from citric acid and methacrylic anhydride. Poly(methacryloyl-2-oxy-1,2,3-propane tricarboxylic acid) and poly(methacryloyl-2-oxy-1,2,3-propane tricarboxylic acid)-co-(maleic anhydride) were prepd. by radical polymn. Terpoly(methacryloyl-2-oxy-1,2,3-propane tricarboxylic acid-maleic anhydride-furan) was obtained by in situ terpolymn. of MTCA and exo-3,6-epoxy-1,2,3,6-tetrahydrophthalic anhydride. The prepd. samples were identified by FTIR, 1H- and 13C-NMR spectroscopy. The no.-av. mol. wts. of the fractionated polymers detd. by GPC were in the range 14,900-16,600 and polydispersity indexes were <1.14. The in vitro IC50 values of the monomer and polymers against cancer and normal cell lines were much higher than those of 5-fluorouracil (5-FU). The in vivo antitumor activities of the prepd. samples at a dosage of 0.8 mg kg-1 against mice bearing the sarcoma 180 tumor cell line decreased in the order terpolymer poly(MTCA-MAH-FUR) >poly(MTCA-co-MAH) >poly(MTCA) >MTCA >5-FU. The prepd. samples inhibited DNA replication and angiogenetic activity more than did 5-FU.
IT **334887-02-4P**
(thermal- and photopolymd.; prepn. and antitumor and antiangiogenesis activity of polymers based on methacryloyloxypropane tricarboxylic acid)
RN 334887-02-4 HCA
CN 1,2,3-Propanetricarboxylic acid, 2-[(2-methyl-1-oxo-2-propenyl)oxy]-

, polymer with rel-(3aR,4S,7R,7aS)-3a,4,7,7a-tetrahydro-4,7-epoxyisobenzofuran-1,3-dione (9CI) (CA INDEX NAME)

CM 1

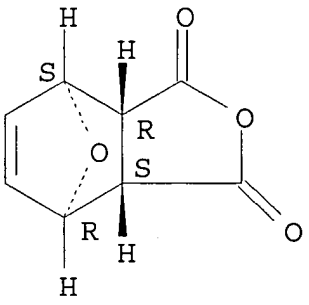
CRN 334886-99-6
CMF C10 H12 O8



CM 2

CRN 6118-51-0
CMF C8 H6 O4

Relative stereochemistry.



IT **334887-02-4P**
(thermal- and photopolymd.; prepn. and antitumor and antiangiogenesis activity of polymers based on methacryloyloxypropane tricarboxylic acid)

L10 ANSWER 3 OF 14 HCA COPYRIGHT 2003 ACS on STN
133:282165 Novel routes to polyelectrolytes and reactive polymers via ROMP. Schitter, R. M. E.; Jocham, D.; Stelzer, F.; Moszner, N.; Volkel, Th. (Institut fuer Chemische Technologie organ. Stoffe, TU-Graz, Graz, A-8010, Austria). Journal of Applied Polymer Science, 78(1), 47-60 (English) 2000. CODEN: JAPNAB. ISSN: 0021-8995. Publisher: John Wiley & Sons, Inc..
AB Various derivs. of norbornene and 7-oxanorbornenedicarboxylic acid have been synthesized and polymd. via Ring Opening Metathesis

Polymn. (ROMP). The introduction of tetrahydropyranyl moieties as protection groups opened a way for the synthesis of polyelectrolytes through well-defined transition metal alkylidene catalysts that are usually deactivated by reactions with acidic protons. The incorporation of methacrylate groups in the polycarboxylic acids was achieved either by copolymn. of methacrylate functionalized norbornene or 7-oxanorbornene derivs., or by the polymer analogs reaction of the polycarboxylic acids with glycidyl methacrylate (GMA). These materials are sol. in water as well as in ethanol and undergo crosslinking reactions initiated by UV light.

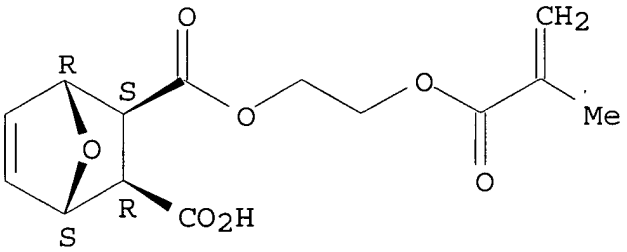
IT **299423-40-8P 299423-41-9P 299423-42-0P**
299432-78-3P
(novel routes to prep. polyelectrolytes and reactive polymers via ring-opening metathetic polymn. and structure and mol. wt. of resulting polymers)

RN 299423-40-8 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, mono[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl] ester, (1R,2S,3R,4S)-rel-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 299423-38-4
CMF C14 H16 O7

Relative stereochemistry.

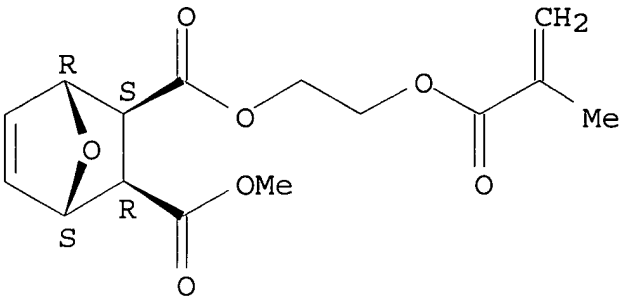


RN 299423-41-9 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, methyl 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester, (1R,2S,3R,4S)-rel-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 299423-39-5
CMF C15 H18 O7

Relative stereochemistry.

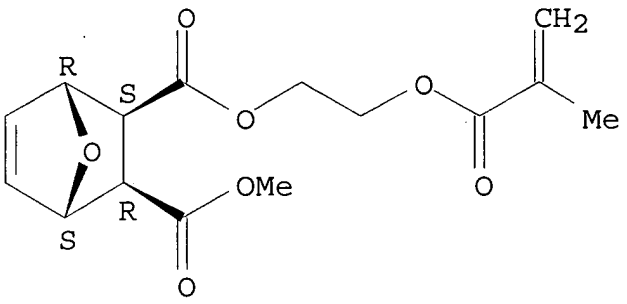


RN 299423-42-0 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, bis(tetrahydro-2H-pyran-2-yl) ester, (1R,2S,3R,4S)-rel-, polymer with rel-methyl (1R,2S,3R,4S)-2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl 7-oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylate (9CI) (CA INDEX NAME)

CM 1

CRN 299423-39-5
CMF C15 H18 O7

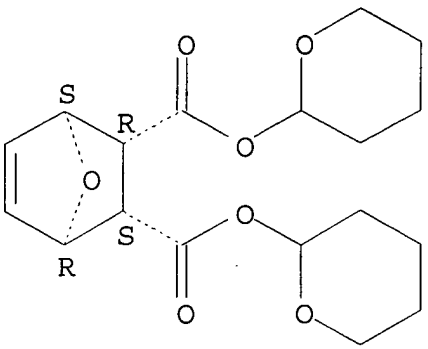
Relative stereochemistry.



CM 2

CRN 220802-23-3
CMF C18 H24 O7

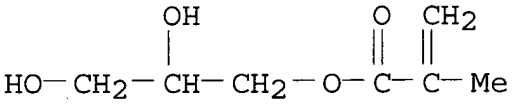
Relative stereochemistry.



RN 299432-78-3 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, (1R,2S,3R,4S)-rel-, homopolymer, 2-hydroxy-3-[(2-methyl-1-oxo-2-propenyl)oxy]propyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 5919-74-4
CMF C7 H12 O4



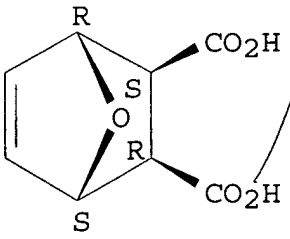
CM 2

CRN 132955-58-9
CMF (C8 H8 O5)x
CCI PMS

CM 3

CRN 28871-62-7
CMF C8 H8 O5

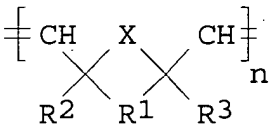
Relative stereochemistry.



IT **299423-40-8P 299423-41-9P 299423-42-0P**
299432-78-3P
(novel routes to prep. polyelectrolytes and reactive polymers via ring-opening metathetic polymn. and structure and mol. wt. of resulting polymers)

L10 ANSWER 4 OF 14 HCA COPYRIGHT 2003 ACS on STN
130:272052 Dental materials based on oligomers or polymers obtained by ring-opening metathesis polymerization (ROMP). Bissinger, Peter (Espe Dental A.G., Germany). Eur. Pat. Appl. EP 904767 A2 19990331, 15 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (German). CODEN: EPXXDW. APPLICATION: EP 1998-118366 19980929. PRIORITY: DE 1997-19742980 19970929.

GI



I

AB Dental filling materials, cements, inlays, veneers, etc., are prepd. from oligomers or polymers (:CHR1CH:)m or I [R1 = (substituted) C2-10 alkylene, alkenylene, or epoxyalkylene, (substituted) C6-15 arylene, di- or tetrahydrofuran-2,5-dione-3,4-diyl; R2, R3 = H, C1-15 alkyl, CO2R6, CONHR6, PO3H2,, SO3H, OH; R6 = H, (O- or N-contg.) alkyl or aryl] by ROMP with catalysis by transition metal org. compds. The starting oligomers or polymers addnl. contain groups which can be subjected to radical polymn. (leading to materials showing little shrinkage during hardening) or to hardening with a reactive filler (providing materials with improved mech. properties). Thus, 30 g exo-7-oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic anhydride was dissolved in 23.5 g hydroxyethyl methacrylate, stirred for 10 h, mixed with an aq. soln. of K2RuCl5.xH2O, and heated to 60.degree. to produce a viscous soln. which was dried under vacuum. The residue was combined with 10 g triethylene glycol dimethacrylate, and 10 g of the mixt. was mixed with bis(hydroxymethyl)tricyclo[5.2.1.02,6]decane diacrylate 10, camphorquinone 0.07, fumed silica 0.5, and quartz powder 79.5 g to produce a homogeneous paste. The paste was placed in a mold and hardened by irradn. with visible light. The product had a compression strength of 412 MPa, bending strength of 98 MPa, and shrinkage during polymn. of 1.6%.

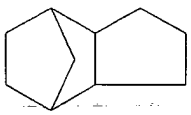
IT **221881-15-8**
(dental materials based on oligomers or polymers obtained by ROMP)

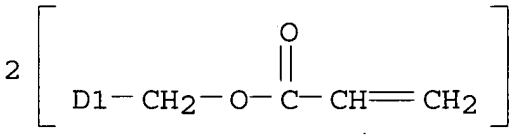
RN 221881-15-8 HCA
CN 2-Propenoic acid, 2-methyl-, 1,2-ethanediylbis(oxy-2,1-ethanediyl)

ester, polymer with 2-hydroxyethyl 2-methyl-2-propenoate, (octahydro-4,7-methano-1H-indene-5,?-diyl)bis(methylene) di-2-propenoate and rel-(3aR,4S,7R,7aS)-3a,4,7,7a-tetrahydro-4,7-epoxyisobenzofuran-1,3-dione (9CI) (CA INDEX NAME)

CM 1

CRN 42594-17-2
CMF C18 H24 O4
CCI IDS

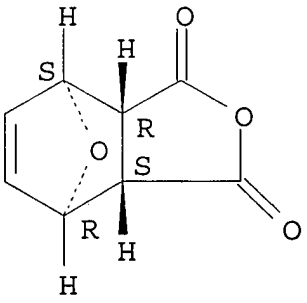




CM 2

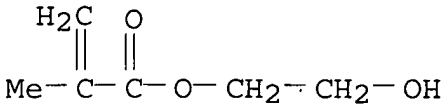
CRN 6118-51-0
CMF C8 H6 O4

Relative stereochemistry.



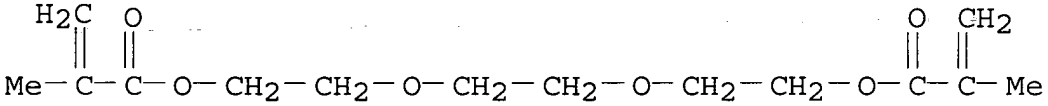
CM 3

CRN 868-77-9
CMF C6 H10 O3



CM 4

CRN 109-16-0
CMF C14 H22 O6

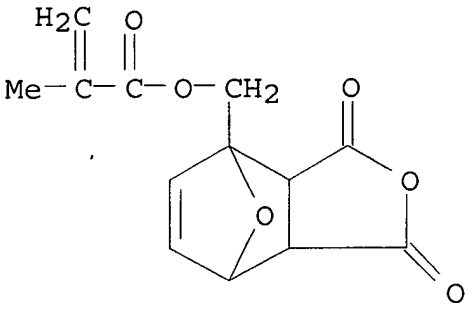


IT **221881-15-8**
(dental materials based on oligomers or polymers obtained by ROMP)

L10 ANSWER 5 OF 14 HCA COPYRIGHT 2003 ACS on STN
128:75744 Monomers for adhesive polymers. Part 1. Synthesis and radical polymerization of bicyclic monomers. Moszner, Norbert; Zeuner, Frank; Rheinberger, Volker (Ivoclar A.-G., Schaan, FL-9494, Liechtenstein). Polymer Bulletin (Berlin), 39(6), 669-676 (English) 1997. CODEN: POBUDR. ISSN: 0170-0839. Publisher: Springer-Verlag.
AB Bicyclic functionalized methacrylates were synthesized by a Diels-Alder reaction of furfuryl methacrylate with maleic anhydride and subsequent conversion to the corresponding monomers contg. carboxylic groups. The structure of the bicyclic functionalized methacrylates was confirmed by elemental anal., IR, and 1H and 13C NMR. The radical photopolymn. of bicyclic monomethacrylates in DMF with 2,2'-azobisisobutyronitrile (AIBN) resulted in sol. polymers, while a bicyclic dimethacrylate resulted in a crosslinked polymer.
IT **31343-32-5P 200507-11-5P 200507-12-6P**
200507-13-7P
(prepn. and radical polymn. of carboxyl-contg. bicyclic methacrylates)
RN 31343-32-5 HCA
CN 2-Propenoic acid, 2-methyl-, (3,3a,7,7a-tetrahydro-1,3-dioxo-4,7-epoxyisobenzofuran-4(1H)-yl)methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

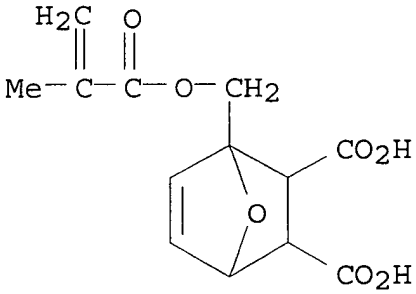
CRN 7726-38-7
CMF C13 H12 O6



RN 200507-11-5 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

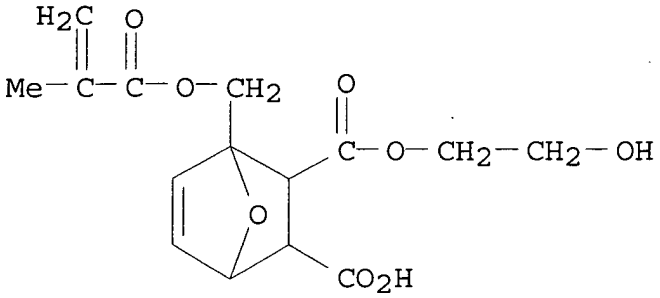
CRN 200507-05-7
CMF C13 H14 O7



RN 200507-12-6 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, 2-(2-hydroxyethyl) ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

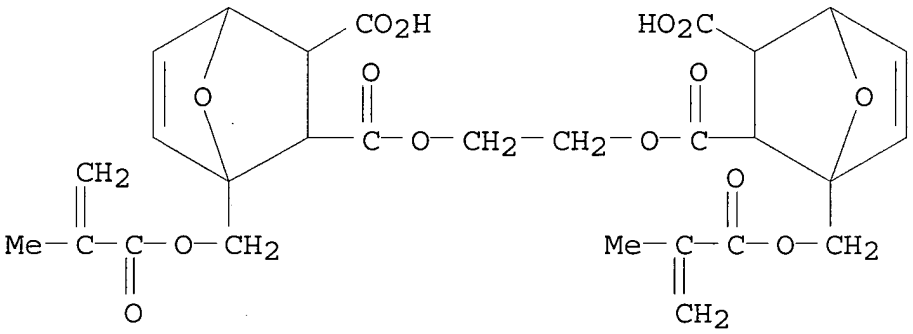
CRN 200507-06-8
CMF C15 H18 O8



RN 200507-13-7 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, 2,2'-(1,2-ethanediyl) ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 200507-10-4
CMF C28 H30 O14



IT **31343-32-5P 200507-11-5P 200507-12-6P 200507-13-7P**
(prepn. and radical polymn. of carboxyl-contg. bicyclic methacrylates)

L10 ANSWER 6 OF 14 HCA COPYRIGHT 2003 ACS on STN
128:43560 Syntheses and biological activities of 5'-O-methacryloyl-3'-azido-3'-deoxythymidine and its polymers. Choi, Won Moon; Lee, Neung Ju; Lee, Young Woo; Ha, Chang Sik; Cho, Won Jei (Dep. Polymer Sci. Eng., Pusan National Univ., Pusan, 609735, S. Korea). Polymer Bulletin (Berlin), 39(5), 535-542 (English) 1997. CODEN: POBUDR. ISSN: 0170-0839. Publisher: Springer-Verlag.
AB The new monomer, 5'-O-methacryloyl-3'-azido-3'-deoxythymidine (MAZT), was synthesized from methacryloyl chloride(MAC) and 3'-azido-3'-deoxythymidine (AZT). The homopolymer of MAZT and copolymers of MAZT with acrylic acid (AA) or exo-3,6-epoxy-1,2,3,6-

tetrahydrophthalic glycinylimide (ETGI) were synthesized by radical polymns. The structures of MAZT and polymers were confirmed identified by FT-IR and 1H-NMR spectroscopies. The no. av. mol. wts. (.hivin.Mn) and polydispersity indexes of the synthesized polymers were in the range of 4,400-20,400 and 1.2-2.0. The in vitro cytotoxicities of polymers against K562 human leukemia and normal cell lines were greater than that of control.

IT **199998-18-0P**
(prepn. and biol. activities of O-methacryloyl azidodeoxythymidine and its polymers)

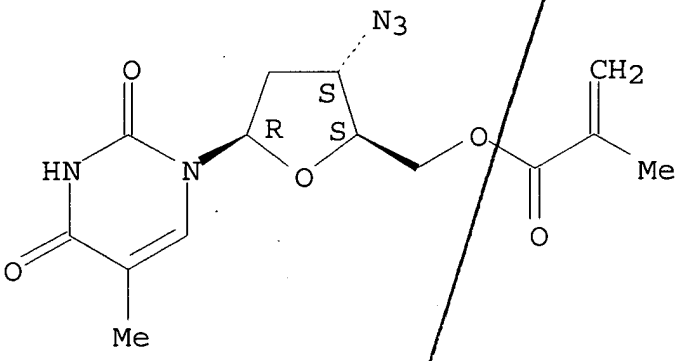
RN 199998-18-0 HCA

CN Thymidine, 3'-azido-3'-deoxy-, 5'-(2-methyl-2-propenoate), polymer with (3a.alpha.,4.beta.,7.beta.,7a.alpha.)-1,3,3a,4,7,7a-hexahydro-1,3-dioxo-4,7-epoxy-2H-isoindole-2-acetic acid (9CI) (CA INDEX NAME)

CM 1

CRN 193471-62-4
CMF C14 H17 N5 O5

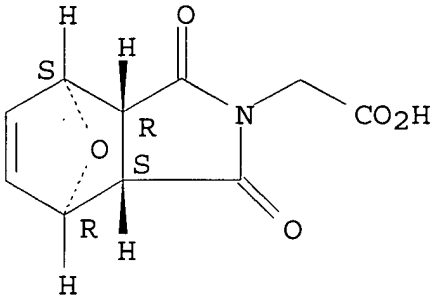
Absolute stereochemistry.



CM 2

CRN 182505-67-5
CMF C10 H9 N O5

Relative stereochemistry.



IT **199998-18-0P**
(prepn. and biol. activities of O-methacryloyl azidodeoxythymidine and its polymers)

L10 ANSWER 7 OF 14 HCA COPYRIGHT 2003 ACS on STN
127:253230 Functionalized bicyclic (meth)acrylates for dental adhesives. Moszner, Norbert; Rheinberger, Volker; Vogel, Karin; Zeuner, Frank (Ivoclar Ag, Liechtenstein). Ger. Offen. DE 19608316 A1 19970828, 18 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1996-19608316 19960222.

AB Functionalized bicyclic (meth)acrylates with norbornenyl or norbornadienyl groups are described which undergo radical polymn. at room temp. and are excellent adhesion promoters for use in dental adhesive compns. Thus, a dental adhesive primer contg. exo-1-[(methacryloyloxy)methyl]-7-oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid mono(2-hydroxyethyl) ester (I) 20, HEMA 20, camphorquinone 0.3, diphenyliodonium hexafluorophosphate (accelerator) 1, H2O 28.7, and EtOH 30 wt.% was applied to a dentin surface for 30 s and blown off, followed by a photohardening bonding compn. (bis-GMA 60, triethylene glycol dimethacrylate 39.26, cyanoethyl(methyl)aniline 0.5, and camphorquinone 0.24 wt.%) and illumination, and finally a photohardening filling compn. (Tetric). I was prepd. by Diels-Alder addn. of maleic anhydride to furfuryl methacrylate, followed by hydrolysis of the anhydride and esterification with ethylene glycol.

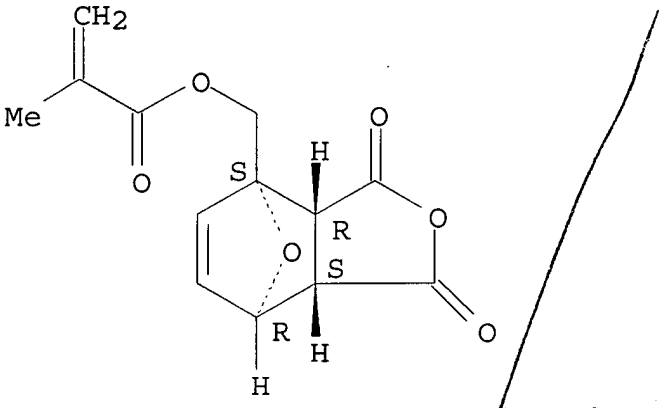
IT **195376-93-3P 195376-94-4P 195442-95-6P**
195540-15-9P
(functionalized bicyclic (meth)acrylates for dental adhesives)

RN 195376-93-3 HCA
CN 2-Propenoic acid, 2-methyl-, [(3aR,4S,7R,7aS)-3,3a,7,7a-tetrahydro-1,3-dioxo-4,7-epoxyisobenzofuran-4(1H)-yl]methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 195376-88-6
CMF C13 H12 O6

Absolute stereochemistry.

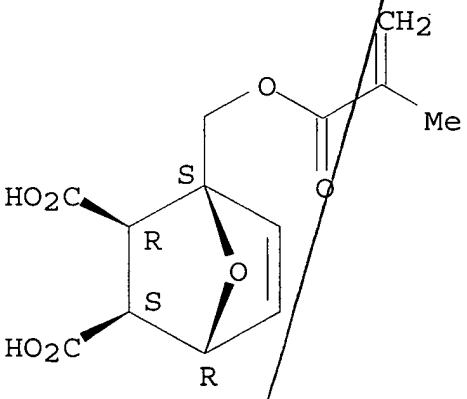


RN 195376-94-4 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, [1S-(exo,exo)]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 195376-89-7
CMF C13 H14 O7

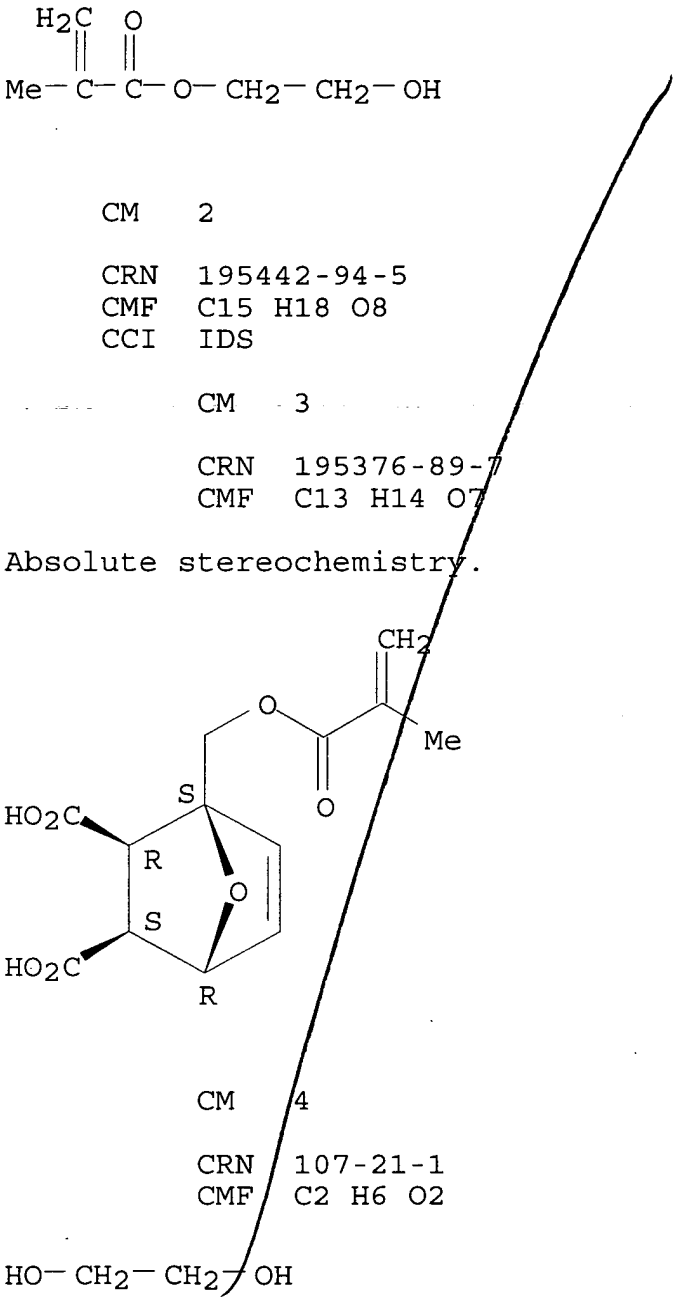
Absolute stereochemistry.



RN 195442-95-6 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, mono(2-hydroxyethyl) ester, [1S-(exo,exo)]-, polymer with 2-hydroxyethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 868-77-9
CMF C6 H10 O3



CM 2

CRN 195442-94-5
CMF C15 H18 O8
CCI IDS

CM 3

CRN 195376-89-7
CMF C13 H14 O7

Absolute stereochemistry.

CM 4

CRN 107-21-1
CMF C2 H6 O2

RN 195540-15-9 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, mono(2-hydroxyethyl) ester, [1S-(exo,exo)]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

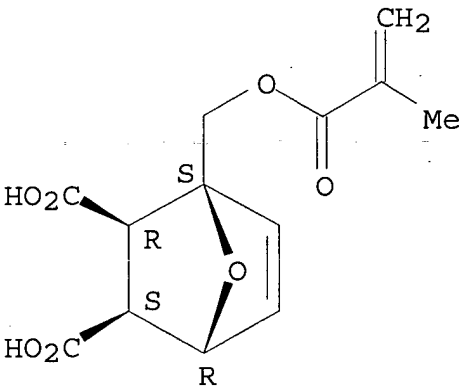
CRN 195442-94-5

CMF C15 H18 O8
CCI IDS

CM 2

CRN 195376-89-7
CMF C13 H14 O7

Absolute stereochemistry.



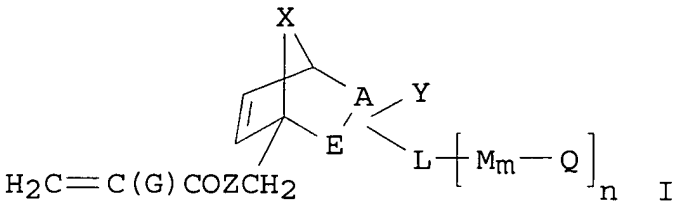
CM 3

CRN 107-21-1
CMF C2 H6 O2

HO— CH_2— CH_2—OH

IT **195376-93-3P 195376-94-4P 195442-95-6P 195540-15-9P**
(functionalized bicyclic (meth)acrylates for dental adhesives)

L10 ANSWER 8 OF 14 HCA COPYRIGHT 2003 ACS on STN
127:248519 Polymerizable hybrid monomers. Moszner, Norbert; Rheinberger, Volker; Zeuner, Frank (Ivoclar Ag, Liechtenstein). Ger. Offen. DE 19608313 A1 19970828, 13 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1996-19608313 19960222.
GI



I

AB The monomers (I; A-E = C:C, C-C; G = H, Me; L = org. connecting group; M = O, NH, CO2, CONH, O2CNH; Q = polymerizable group; X = CH2, O; Y = H, org. group, halogen, NO2, NH2, SH; Z = O, NH; M = 0, 1; n = 1-4) are obtained by a Diels-Alder reaction of a diene (meth)acrylate with a dienophile followed by attachment of the Q group. I may be used in dentin adhesives. Thus, maleic anhydride was subjected to a Diels-Alder reaction with furfuryl methacrylate and the resulting oxanorbornenedicarboxylic anhydride was monoesterified with allyl alc. to give a monomer which was copolymd. with 2-hydroxyethyl methacrylate to provide a dentin adhesive primer.

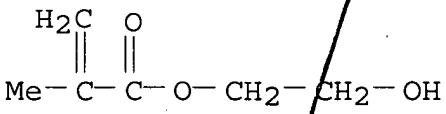
IT **195378-02-0P**
(dentin adhesive primer; prepn. of hybrid monomers for dentin adhesives)

RN 195378-02-0 HCA

CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, mono-2-propenyl ester, (exo,exo)-, polymer with 2-hydroxyethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 868-77-9
CMF C6 H10 O3



CM 2

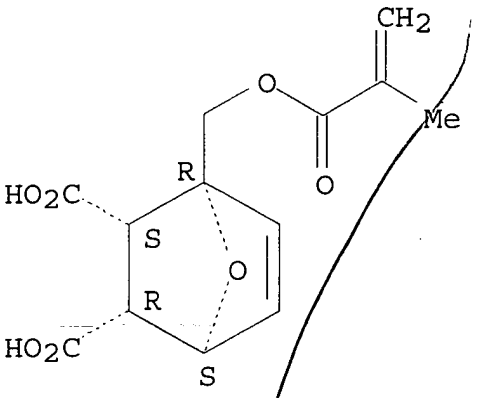
CRN 195378-01-9
CMF C16 H18 O7
CCI IDS

CM 3

CRN 194920-51-9

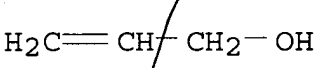
CMF C13 H14 O7

Relative stereochemistry.



CM 4

CRN 107-18-6
CMF C3 H6 O



IT **195540-06-8P 195540-07-9P 195540-08-0P**
195540-09-1P 195540-10-4P 195540-11-5P
(prepn. of hybrid monomers for dentin adhesives)
RN 195540-06-8 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, mono[2-(ethenyloxy)ethyl] ester, (exo,exo)-, homopolymer (9CI) (CA INDEX NAME)

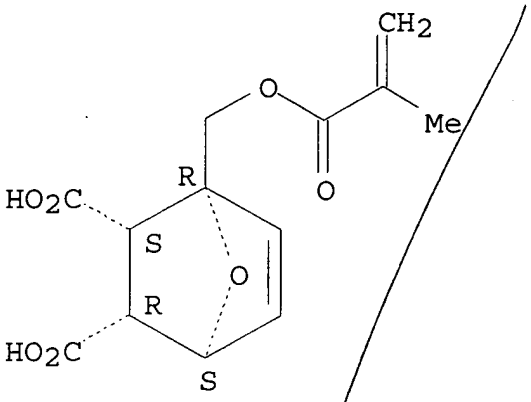
CM 1

CRN 195377-97-0
CMF C17 H20 O8
CCI IDS

CM 2

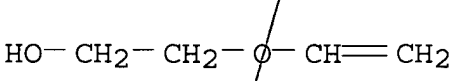
CRN 194920-51-9
CMF C13 H14 O7

Relative stereochemistry.



CM 3

CRN 764-48-7
CMF C4 H8 O2



RN 195540-07-9 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, mono[2-[(1-oxo-2-propenyl)oxy]methyl] ester, (exo,exo)-, homopolymer (9CI) (CA INDEX NAME)

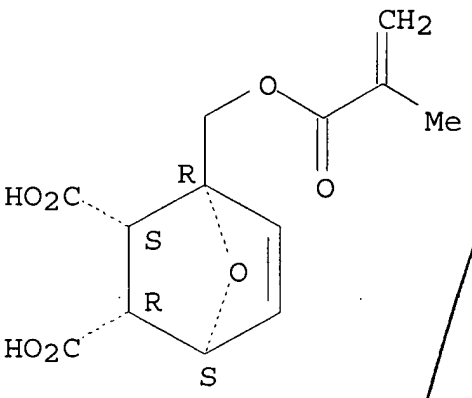
CM 1

CRN 195377-98-1
CMF C18 H20 O9
CCI IDS

CM 2

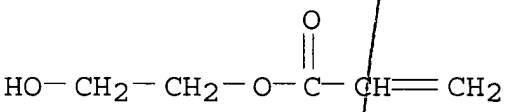
CRN 194920-51-9
CMF C13 H14 O7

Relative stereochemistry.



CM 3

CRN 818-61-1
CMF C5 H8 O3



RN 195540-08-0 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, mono[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl] ester, (exo,exo)-, homopolymer (9CI) (CA INDEX NAME)

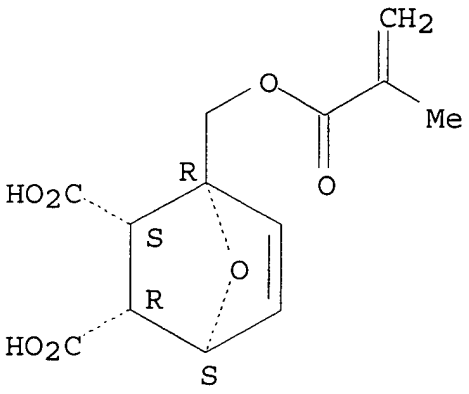
CM 1

CRN 195378-00-8
CMF C19 H22 O9
CCI IDS

CM 2

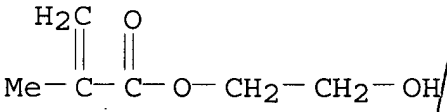
CRN 194920-51-9
CMF C13 H14 O7

Relative stereochemistry.



CM 3

CRN 868-77-9
CMF C6 H10 O3



RN 195540-09-1 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, mono-2-propenyl ester, (exo,exo)-, homopolymer (9CI) (CA INDEX NAME)

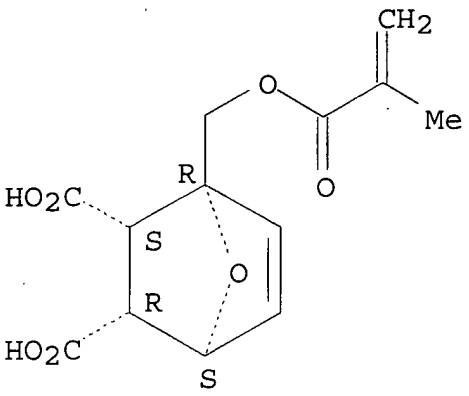
CM 1

CRN 195378-01-9
CMF C16 H18 O7
CCI IDS

CM 2

CRN 194920-51-9
CMF C13 H14 O7

Relative stereochemistry.



CM 3

CRN 107-18-6
CMF C3 H6 O

$H_2C{=}CH{-}CH_2{-}OH$

RN 195540-10-4 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, mono[2-[(2-methyl-1-oxo-2-propenyl)oxy]-1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]ethyl] ester, (exo,exo)-, homopolymer (9CI) (CA INDEX NAME)

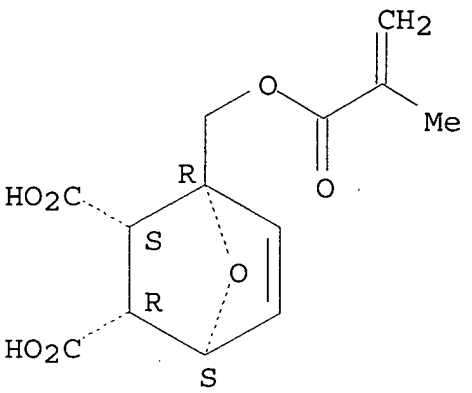
CM 1

CRN 195378-03-1
CMF C24 H28 O11
CCI IDS

CM 2

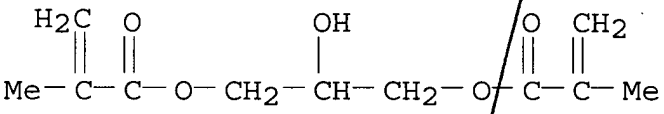
CRN 194920-51-9
CMF C13 H14 O7

Relative stereochemistry.



CM 3

CRN 1830-78-0
CMF C11 H16 O5



RN 195540-11-5 HCA
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-, monopropyl ester, (exo,exo)-, homopolymer (9CI) (CA INDEX NAME)

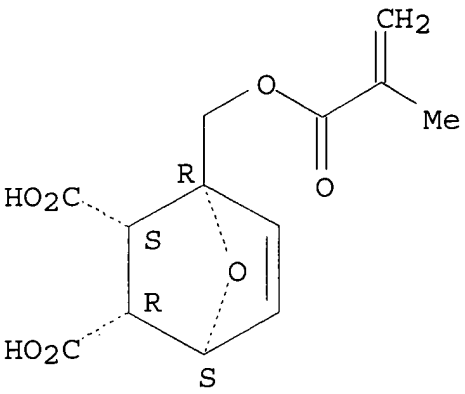
CM 1

CRN 195378-04-2
CMF C16 H20 O7
CCI IDS

CM 2

CRN 194920-51-9
CMF C13 H14 O7

Relative stereochemistry.

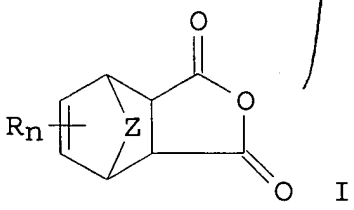


CM 3

CRN 71-23-8
CMF C3 H8 O

IT **195378-02-0P**
(dentin adhesive primer; prepn. of hybrid monomers for dentin adhesives)
IT **195540-06-8P 195540-07-9P 195540-08-0P**
195540-09-1P 195540-10-4P 195540-11-5P
(prepn. of hybrid monomers for dentin adhesives)

L10 ANSWER 9 OF 14 HCA COPYRIGHT 2003 ACS on STN
119:118074 Bicycloheptenedicarboxylic anhydride derivative polymers.
Besecke, Siegmund; Guentherberg, Norbert (BASF A.-G., Germany).
Ger. Offen. DE 4117369 A1 19921203, 7 pp. (German). CODEN: GWXXBX.
APPLICATION: DE 1991-4117369 19910528.
GI



AB Polymers with good resistance to thermal distortion and good flow and color stability are prepd. from the anhydrides I (R = alkyl, alkoxy, aryl, aryloxy, alkylaryl, CN, Cl, Br, CO2H, carboalkoxy,

acyloxy, carbamoyl; Z = O, S; n = 0-4) and, optionally, .ltoreq.95% comonomer. Peroxide-initiated polymn. of a 23:77 mixt. of I (Z = O, n = 0) and Me methacrylate in THF at 60.degree. for 9 h gave a copolymer with glass temp. 117.degree., decompn. temp. 303.degree., and temp. of 2% wt. loss 263.degree.; vs. 107, 250, and 234, resp., for PMMA.

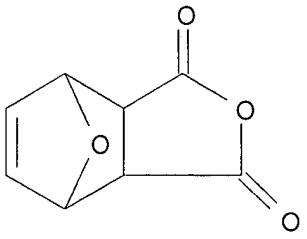
IT **148976-99-2P**, MMA-7-oxabicyclo[4.1.0]hept-5-ene-2,3-dicarboxylic anhydride copolymer **148977-01-9P**, MMA-7-oxabicyclo[4.1.0]hept-5-ene-2,3-dicarboxylic anhydride-styrene copolymer
(prepn. of, with good thermal stability)

RN 148976-99-2 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 3a,4,7,7a-tetrahydro-4,7-epoxyisobenzofuran-1,3-dione (9CI) (CA INDEX NAME)

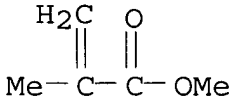
CM 1

CRN 5426-09-5
CMF C8 H6 O4



CM 2

CRN 80-62-6
CMF C5 H8 O2

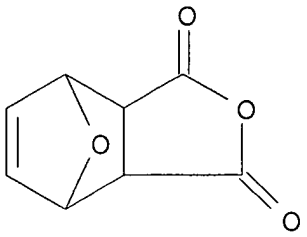


RN 148977-01-9 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethenylbenzene and 3a,4,7,7a-tetrahydro-4,7-epoxyisobenzofuran-1,3-dione (9CI) (CA INDEX NAME)

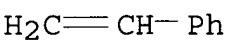
CM 1

CRN 5426-09-5
CMF C8 H6 O4



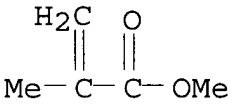
CM 2

CRN 100-42-5
CMF C8 H8



CM 3

CRN 80-62-6
CMF C5 H8 O2



IT **148976-99-2P**, MMA-7-oxabicyclo[4.1.0]hept-5-ene-2,3-dicarboxylic anhydride copolymer **148977-01-9P**, MMA-7-oxabicyclo[4.1.0]hept-5-ene-2,3-dicarboxylic anhydride-styrene copolymer
(prepn. of, with good thermal stability)

L10 ANSWER 10 OF 14 HCA COPYRIGHT 2003 ACS on STN
118:192255 Immobilized thermolysin and synthesis of precursor of aspartame. Zhou, Qingzhong; Huang, Zhen (Dep. Chem., Peking Univ., Beijing, 100871, Peop. Rep. China). Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry, 32B(1), 35-9 (English) 1993. CODEN: IJSBDB. ISSN: 0376-4699.
AB Optimal conditions for the thermolysin-catalyzed condensation of Z-DL-Asp-OMe (Z = PhCH2O2C) with H-DL-Phe-OMe to give Z-L-Asp-L-Phe-OMe, the precursor of the synthetic sweetener aspartame were investigated. The immobilized thermolysins were prepd. using 7 polymethacrylate derivs. as carriers by covalent coupling of the polymers with enzyme. The abilities of the immobilized thermolysis to catalyze the condensation reaction were tested and 100% yield was obtained using one of them.
IT **146899-29-8P**
(prepn. of, as carrier for thermolysin in peptide coupling

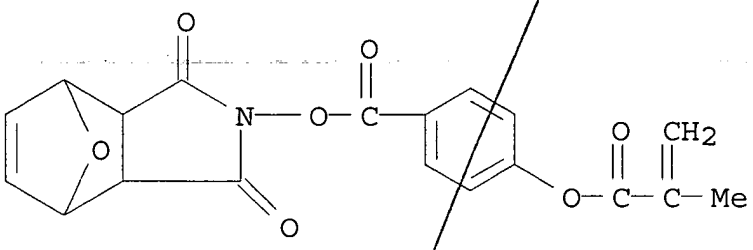
reactions)

RN 146899-29-8 HCA

CN 2-Propenoic acid, 2-methyl-, 4-[[(1,3,3a,4,7,7a-hexahydro-1,4-dioxo-4,7-epoxy-2H-isoindol-2-yl)oxy]carbonyl]phenyl ester, (3a.alpha.,4.alpha.,7.alpha.,7a.alpha.)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 146899-28-7
CMF C19 H15 N O7



IT **146899-29-8P**
(prepn. of, as carrier for thermolysin in peptide coupling reactions)

L10 ANSWER 11 OF 14 HCA COPYRIGHT 2003 ACS on STN

114:43679 Oligomerization and copolymerization of endo-N-cyclohexyl-9-oxabicyclo[2.2.1]hept-2-ene-5,6-dicarboximide. Oishi, Tsutomu; Momoi, Masaaki; Fujimoto, Minoru (Tech. Coll., Yamaguchi Univ., Ube, 755, Japan). Polymer Journal (Tokyo, Japan), 22(11), 1007-14 (English) 1990. CODEN: POLJB8. ISSN: 0032-3896.

AB endo-N-Cyclohexyl-9-oxabicyclo[2.2.1]hept-2-ene-5,6-dicarboximide (I) was prepd. from N-cyclohexylmaleimide and furan by Diels-Alder reaction and polymd. The no.-av. mol. wts. (.hivin.Mn) of the polymers insol. in MeOH were 1100-2000, i.e., the d.p. was 4-8. The oligomers having .hivin.Mn <1000 were sol. in MeOH. I was copolymd. with styrene, Me methacrylate, and vinyl acetate in the presence of radical initiators. The monomer reactivity ratios and Alfrey-Price Q-e values were detd.

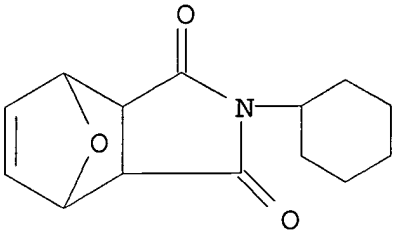
IT **127122-32-1**
(mol. wt. distribution of)

RN 127122-32-1 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 2-cyclohexyl-3a,4,7,7a-tetrahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione (9CI) (CA INDEX NAME)

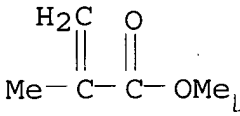
CM 1

CRN 127122-27-4
CMF C14 H17 N O3



CM 2

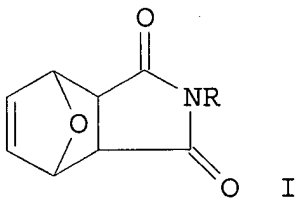
CRN 80-62-6
CMF C5 H8 O2



IT **127122-32-1**
(mol. wt. distribution of)

L10 ANSWER 12 OF 14 HCA COPYRIGHT 2003 ACS on STN
112:236040 Heat-resistant oxabicycloheptenedicarboximide copolymers. Kinoshita, Seigo; Kato, Kenji; Haruta, Yukinori; Oishi, Tsutomu (Nippon Oils and Fats Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01311112 A2 19891215 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-140540 19880609.

GI



I

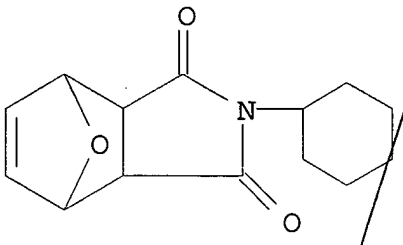
AB The title copolymers are composed of oxabicycloheptenedicarboximides I (R = H, C1-18 alkyl, cycloalkyl, aryl, aralkyl) and other vinyl monomers. Thus, reflux of 17.6 g N-cyclohexylmaleimide and 20.4 g furan in toluene for 3 h gave 75.0% I (R = cyclohexyl), 0.372 g of which was polymd. with 0.628 g styrene in presence of Perhexyne 25B at 120.degree. for 20 h to give 88.7% copolymer with no.-av. mol. wt. 10.51 .times. 104, wt.-av. mol. wt. 12.19 .times. 104, and softening point 148.degree..

IT **127122-32-1P**

(prepn. of, heat-resistant)
RN 127122-32-1 HCA
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 2-cyclohexyl-3a,4,7,7a-tetrahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione (9CI) (CA INDEX NAME)

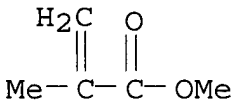
CM 1

CRN 127122-27-4
CMF C14 H17 N O3



CM 2

CRN 80-62-6
CMF C5 H8 O2



IT **127122-32-1P**
(prepn. of, heat-resistant)

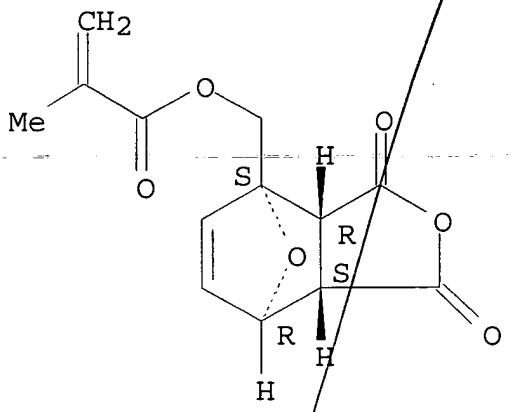
L10 ANSWER 13 OF 14 HCA COPYRIGHT 2003 ACS on STN
81:78318 Radical polymerization of furan with maleic anhydride through the Diels-Alder adduct. Kamo, Bunzo; Morita, Isamu; Horie, Satoshi; Furusawa, Shijo (Fac. Sci. Eng., Chuo Univ., Tokyo, Japan). Polymer Journal (Tokyo, Japan), 6(2), 121-31 (English) 1974. CODEN: POLJB8. ISSN: 0032-3896.
AB An equimolar reaction of furan, 2-methylfuran, or 2,5-dimethylfuran with maleic anhydride (I) in acetone at 60.deg. gave the Diels-Alder exo adducts (II, R1, R2 = H, Me) which were polymd. at 70.deg. in the presence of azobisisobutyronitrile as radical initiator. The reaction of furfuryl methacrylate with I gave the same result.
IT **52520-31-7P**
(prepn. of)
RN 52520-31-7 HCA
CN 2-Propenoic acid, 2-methyl-, (3,3a,7,7a-tetrahydro-1,3-dioxo-4,7-epoxyisobenzofuran-4(1H)-yl)methyl ester, (3a.alpha.,4.beta.,7.beta.,7a.alpha.)-, homopolymer (9CI) (CA INDEX

NAME)

CM 1

CRN 52485-74-2
CMF C13 H12 O6

Relative stereochemistry.



IT **52520-31-7P**
(prepn. of)

L10 ANSWER 14 OF 14 HCA COPYRIGHT 2003 ACS on STN
66:46639 Polymers of adducts of furfuryl methacrylate with maleic anhydride and maleimide. Mikhailov, Marin; Budevska, Khr.; Berlin, A. A. Comptes Rendus de l'Academie Bulgare des Sciences, 19(11), 1019-22 (English) 1966. CODEN: CRABAA.

AB A furfuryl methacrylate-maleic anhydride adduct and a furfuryl methacrylate-maleimide adduct were homopolmd. in 10% C6H6 and AcOMe solns. in the presence of 2% azobisisobutyronitrile to yield yellowish to white polymers which swell in C6H6, AcOMe, CHCl3, and HCONMe2 and do not melt up to 280.degree.. The polymers, which are assumed to be partially crosslinked polyadducts, have nearly identical residues when heated above 293.degree.. Under 100.degree., they undergo deadduction, and the .pi.-complexes formed dissociate from 100 to 293.degree., while part of the remaining dienophile is polymd. and part is volatilized.

IT **31343-32-5P 31343-33-6P**
(prepn. of)

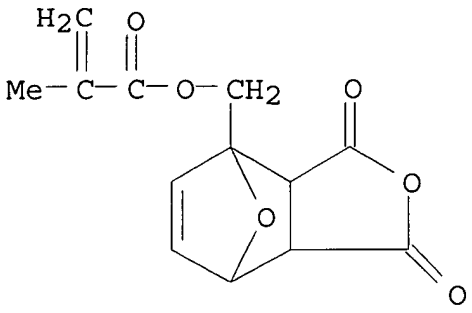
RN 31343-32-5 HCA

CN 2-Propenoic acid, 2-methyl-, (3,3a,7,7a-tetrahydro-1,3-dioxo-4,7-epoxyisobenzofuran-4(1H)-yl)methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 7726-38-7

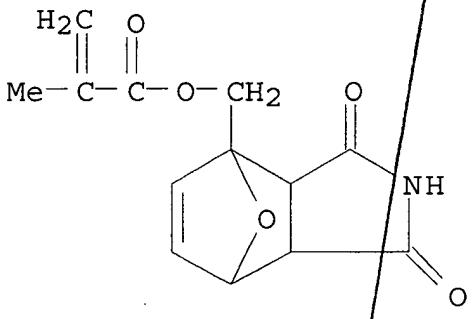
CMF C13 H12 O6



RN 31343-33-6 HCA
CN Methacrylic acid, ester with 1-(hydroxymethyl)-7-oxabicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, polymers (8CI) (CA INDEX NAME)

CM 1

CRN 7726-39-8
CMF C13 H13 N O5



IT **31343-32-5P 31343-33-6P**
(prepn. of)